Public Utilities

FORTNIGHTLY

Volume 59 No. 10 May 9, 1957

PUBLIC UTILITIES REPORTS, INC.

OUR DEFECTIVE FEDERAL PROJECT POWER MARKETING LAW
Part I.
By Robb M. Winsborough

« »

Utility Common Stock Financing
By Frederick W. Page

« »

Sampling Meter-testing Techniques
By W. Capers Harrison

« »

Study of AEC Licensing Procedures

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Public Utilities FORTNIGHTLY

VOLUME 59 MAY 9, 1957 NUMBER 10

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A means of selecting for test those meters which may require calibration and reduce unproductive and time-consuming testing operations.

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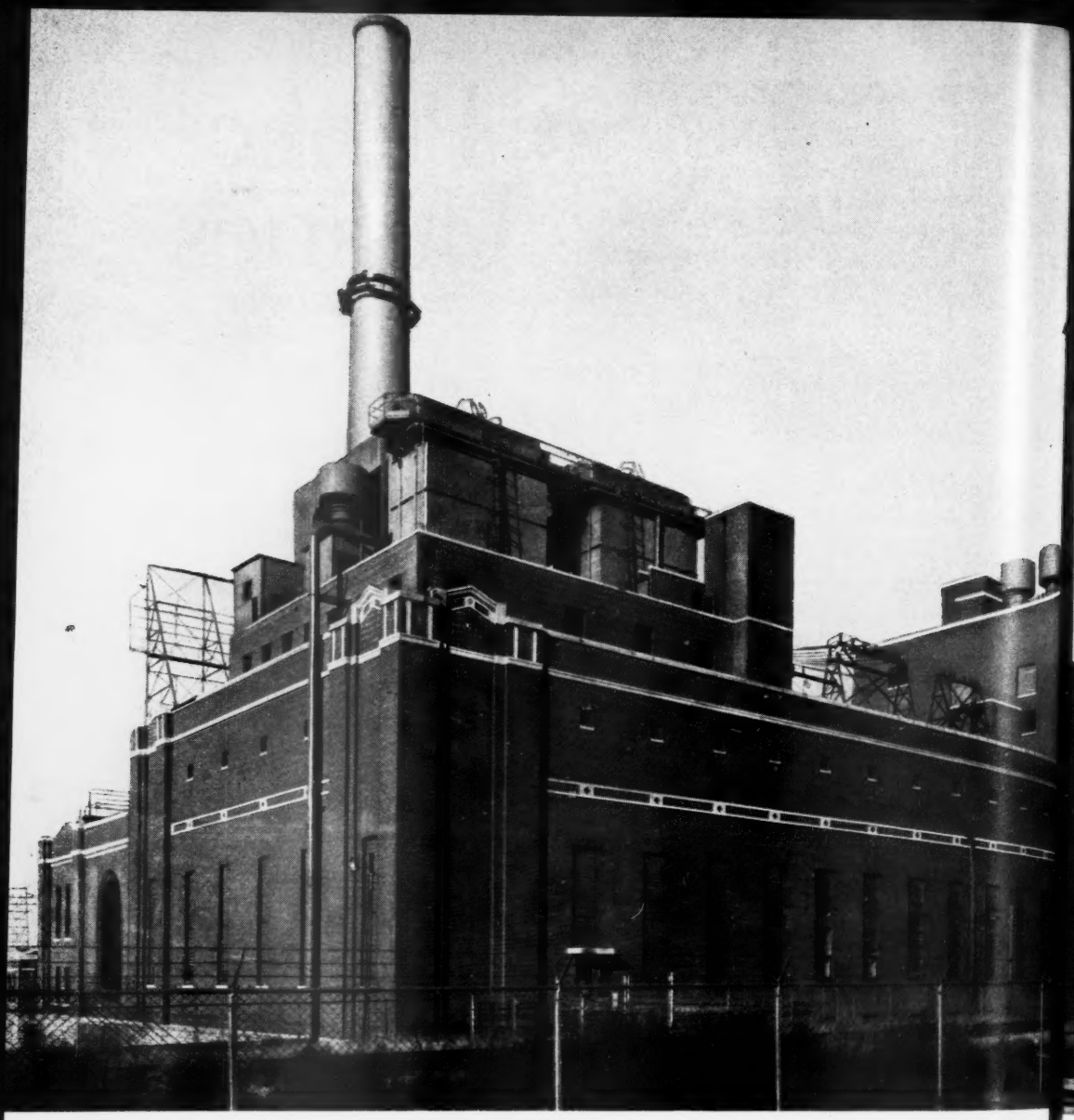
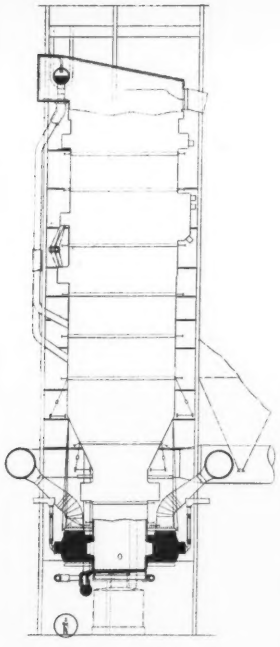


New Cyclone Furnace Uni

Installation at Joliet Station to Bring Higher Efficiency ... Lower Costs to Power Generation

Commonwealth Edison System's newest addition, its Joliet Station, will be a B&W Radiant Reh Boiler with Cyclone Furnaces. This is the 16th u of this type the system has bought since 1944 a raises total system capacity served by Cyclone-fir units to over 1,600,000 kw.

Early in the development of the Cyclone Furn by B&W, Commonwealth Edison recognized potentialities for burning low-grade coals. T system's engineers and operators cooperated w B&W in the project, and, in September 1944,



B&W RADIANT REHEAT BOILER WITH CYCLONE FURNACES, arranged for opposed firing, for Commonwealth Edison System's Joliet Station. Unit will deliver 2,200,000 pounds of steam per hour at 2100 psi with temperature of 1055 F, reheat to 1005 F. Boiler design is 2375 psi. Sargent & Lundy, Consulting Engineers.

CYCLONE FURNACE BOILER UNITS IN COMMONWEALTH EDISON SYSTEM

STATION	NO. OF BOILERS	NO. OF CYCLONES	TOTAL CAPACITY LB/HR	DESIGN PRESSURE	STEAM TEMP. F	REHEAT TEMP. F
Calumet	1	1	150,000	600	650	—
Waukegan	1	2	300,000	650	760	—
Fisk	2	8	1,500,000	1475	935	—
Joliet	2	6	1,200,000	1525	1010	—
Ridgeland	4	16	2,920,000	2125	1050	—
Waukegan	1	4	830,000	2050	1010	1010
Ridgeland	2	12	2,200,000	2125	1050	1000
Will County	2	10	2,400,000	2125	1050	1010
Joliet	1	9	2,200,000	2375	1055	1005
	16	68	13,700,000			

For Commonwealth Edison

irst commercial application went on the line at Calumet Station. Historic Boiler Unit No. 20-A, ike the new unit at Joliet, burns highly volatile Central Illinois coal with a high ash content and ow ash-fusion temperature.

The Cyclone Furnace simplifies the entire process f coal preparation, combustion, ash segregation, nd ash handling and effects savings in most of the lements of power generation costs.

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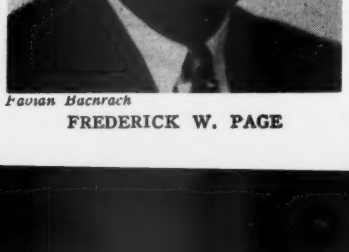
Pages with the Editors

A LOT of water has literally gone over the dams and passed by the levees since Congress enacted the Flood Control Act of 1944. If a federal monopoly of hydroelectric development and greatly expanded incidental steam plant development should ever materialize in the United States, it is quite likely that this Flood Control Act will go down in future history books as the footing or foundation under which such a structure could be built.

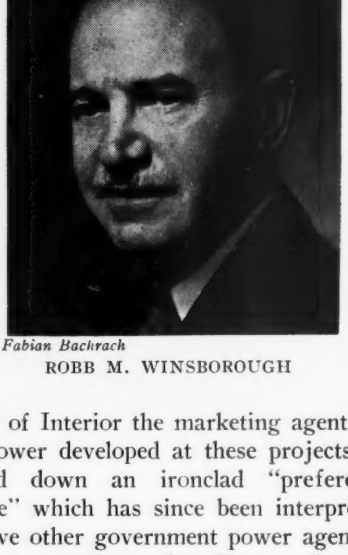
IT did not seem so portentous at the time, which happened to be the last full calendar year in office of the late President Franklin D. Rooseyelt. Ostensibly, the bill was designed primarily to authorize certain flood-control projects which Congress felt were needed at that time. But a fairly modest provision dealing with power developed at federal multipurpose projects has done more to launch Uncle Sam in the power business over a wider area and to encourage local government and co-operative ownership than any preceding statute, not even excepting the Tennessee Valley Authority Act, the Bonneville Act, and other so-called public power project acts.

FOR it was in this Flood Control Act of 1944 that Congress made the Department of Interior the marketing agent for all power developed at these projects. It nailed down an ironclad "preference clause" which has since been interpreted to give other government power agencies and co-operatives virtually an absolute and never-ending priority over business-managed utilities in the sale of power from federal projects. It gave the Secretary of Interior authority to conclude long-term contracts for the sale of power, subject to periodical renegotiation as to rates.



Fabian Bachrach

FREDERICK W. PAGE



Fabian Bachrach

ROBB M. WINSBOROUGH

Now certain defects in this law seem to be coming home to roost. And one of the most glaring examples was a 30-year contract signed in 1952 by the then Secretary of Interior Chapman, to furnish power to the Reynolds Metals Company in combination with the Arkansas Power & Light Company. Today, the government finds that it is losing nearly $2 million a year and now takes the position that the former Secretary had no right to enter into such a contract in the first place, and that it should be annulled.

THE opening article in this issue is the first of a 2-part series analyzing the defects of this ambiguous provision (§ 5) of the Flood Control Act of 1944. The

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first part deals with the specific problem of the Reynolds Metals contract, as a concrete example of the failure of the law to work out. The second part, to appear in our next issue, will deal with other defects which have shown up in the attempt of the government to market power under this troublesome law.

ROBB M. WINSBOROUGH, author of this 2-part series, is a native of Missouri who was raised in Texas and graduated from Rice Institute at Houston. After early operating experience in the oil business in Mexico, he went into the field of journalism in 1926, and in a few years entered the service of the Southwestern Gas & Electric Company at Shreveport, Louisiana, as director of public relations and advertising. In 1938 he transferred to the Middle West Service Company in Chicago, taking charge of personnel matters and public relations. He is now vice president of that organization. During World War II he served as chief of the field service branch, information and education division, Army Service Forces. He had an important part in bringing the Electric Company's Advertising Program (ECAP) into existence, and has written extensively in the field of employee information programs and allied activities relating to public and customer relations, employee relations, and public relations.

* * * *

THE article on common stock financing, which begins on page 658, comes to us from FREDERICK W. PAGE, vice president of Tri-Continental Corporation of Tulsa, Oklahoma, one of the large diversified closed-end investment companies.

THE author is a native of Glen Ridge, New Jersey, and a graduate of Dartmouth (AB, '30) and Harvard Business School (MBA, '32). He joined J. & W. Seligman & Co., one of the oldest brokerage firms in New York, in 1933 as a specialist in public utility security analysis. He later became a partner of that firm and he is now a vice president of the four investment companies in the Tri-Continental group. He also is a director of the Brooklyn Union Gas Company and adviser to Atlantic City Electric Company.

W. CAPERS HARRISON

* * * *

SUBSTANTIAL savings in utility operating costs are expected by the Virginia Electric & Power Company from an improved approach to meter testing through the application of modern sampling methods. The procedure provides a means of selecting for test those meters which may require calibration and reduces the unproductive and time-consuming operation of testing meters which are within the limits of allowable accuracy. In his article beginning on page 670, W. CAPERS HARRISON, system meter supervisor of this utility company, explains this interesting and valuable innovation.

MR. HARRISON is a native of Richmond who received his engineering education at the University of Virginia. When he first joined the old Kentucky & West Virginia Power Company (now part of the Appalachian Electric Company system) in 1922, he was himself a meter man. Since joining the Virginia Electric & Power Company in 1925, he has held various positions, including that of superintendent of the meter installation department. He is also a member of the EEI Meter and Service Committee.

THE next number of this magazine will be out May 23rd.

The Editors

A MESSAGE TO PUBLIC UTILITY EXECUTIVES ON 3 NEW KINDS OF SYNTHETIC ROPE HAVING SPECIAL CHARACTERISTICS OF INTEREST TO PUBLIC UTILITY COMPANIES

NYLON

DACRON

POLYETHYLENE

pes made of synthetic fibers have come increasingly popular in the t several years. Nylon, is the best own of these. More recently K-ting s added ropes made of Dacron* d Polyethylene.

ese new kinds of rope have char-teristics entirely different from pe made of conventional manila er. While it is unlikely that syn-etics will ever replace manila for neral utility purposes, the special aracteristics of synthetics make em particularly suitable for special bs.

PUBLIC UTILITY USES

blic utility companies, for ex-ple, are finding that K-ting Poly-ylene rope is particularly good r pulling cables through conduit. cron rope seems to be finding fa-r for use in raising and lowering ols and small appliances, because of its flexibility and smoothness without loss of gripping power.

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DACRON—Is similar to nylon in advantages, except that it has little or no stretch—therefore does not have nylon's ability to resist sudden strains.

POLYETHYLENE—This is an all-plastic rope twisted from filaments of pure polyethylene. It's smooth as glass to the touch and so light it floats on water. Is impervious to dampness, rot or mildew and is approximately 70% stronger than manila.

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Manufacturing rope from synthetic fibers is an entirely different matter from making it of manila fiber. K-ting has developed the manufacture of these new ropes to the point where they are safe, practical and reasonably priced in relation to the advantages they afford.

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Coming IN THE NEXT ISSUE

(May 23, 1957, issue)

★

NUCLEAR POWER PROJECTS AND THE HOLDING COMPANY ACT

This article discusses generally the industry's organizational problems as they relate to group sponsorship and financing of nuclear power projects and the effect of the Public Utility Holding Company Act of 1935 on such arrangements, particularly as these problems came to SEC's attention in connection with the proposed amendment of the act which was considered but not acted upon by Congress in mid-1956. The article also describes the SEC's amended Rule "U-7" which was adopted in July, 1956, to clarify the SEC's view of the law as it applies to at least one type of organization for group sponsorship of a nuclear power project. The author is the Honorable J. Sinclair Armstrong, retiring as SEC chairman to take another important government post. He explains why he thinks the act is not an impediment to industrial participation, to the fullest possible extent, in the development of nuclear power for commercial purposes.

WHAT ARE THEY TEACHING ABOUT PUBLIC UTILITY REGULATION?

Dr. John D. Garwood, professor of economics at the Fort Hays Kansas State College, has been studying the educational aspects of public utility economics for quite a while. He has come to the conclusion that what the teacher thinks will determine in many instances what the student thinks. And to find out what teachers are thinking about on the subject of public utility economics, he sent out a questionnaire to over three hundred of them. He received about 47 per cent qualified returns and the result is a very interesting cross section of academic thinking in this important field, written from a most objective point of view. There is variety as well as provocative reaction reflected in the numerous quotations selected by Dr. Garwood from his rich source material. For example, twenty-seven professors favor the Eisenhower "partnership policy" for multipurpose power as compared with twenty-two opposed and fifteen without opinion.

OUR DEFECTIVE FEDERAL PROJECT POWER MARKETING LAW. PART II.

Congress made the Secretary of Interior the marketing agency for all power developed at federal multipurpose projects when it passed the Flood Control Act of 1944. In the first of his 2-part series, Robb M. Winsborough, vice president of Middle West Service Company, discussed the 30-year contract which a former Secretary of Interior, Oscar Chapman, signed in 1952 to furnish power to Reynolds Metals Company in combination with Arkansas Power & Light Company. In that instalment it appeared that the government has been losing out of pocket nearly $2 million a year. The government now wants to annul the contract. In this instalment, Mr. Winsborough discusses what can and should be done about the entirely unworkable provision (§ 5) of the Flood Control Act, which has caused the parties concerned so much difficulty so far and will probably cause more trouble before Congress passes remedial legislation.

★

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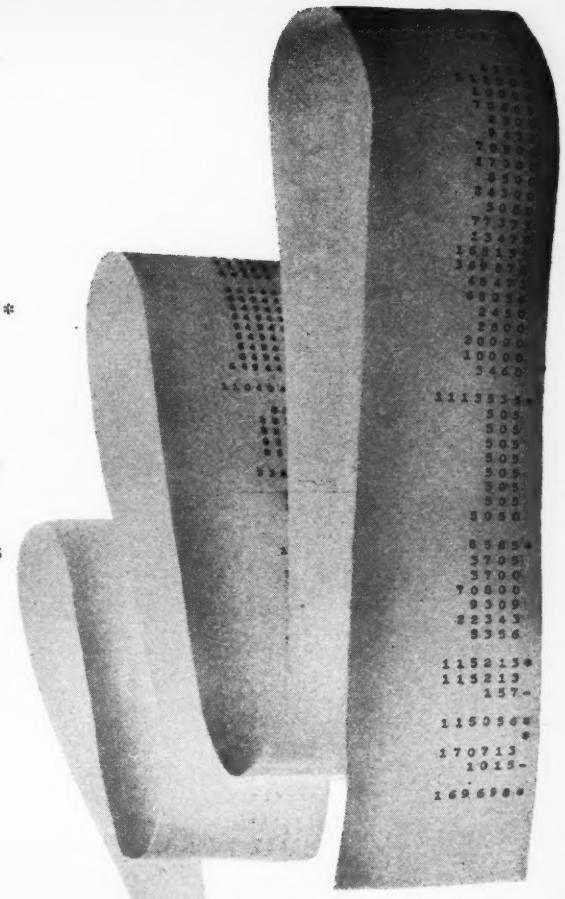

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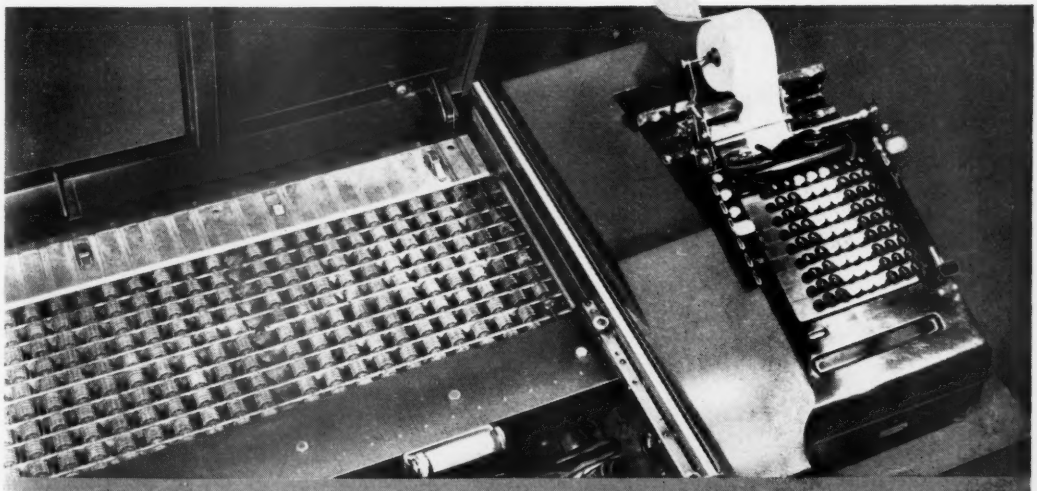

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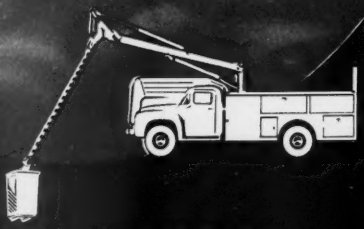

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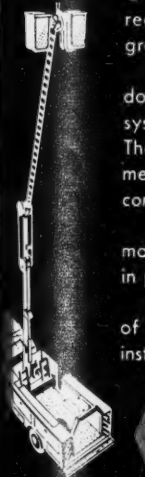

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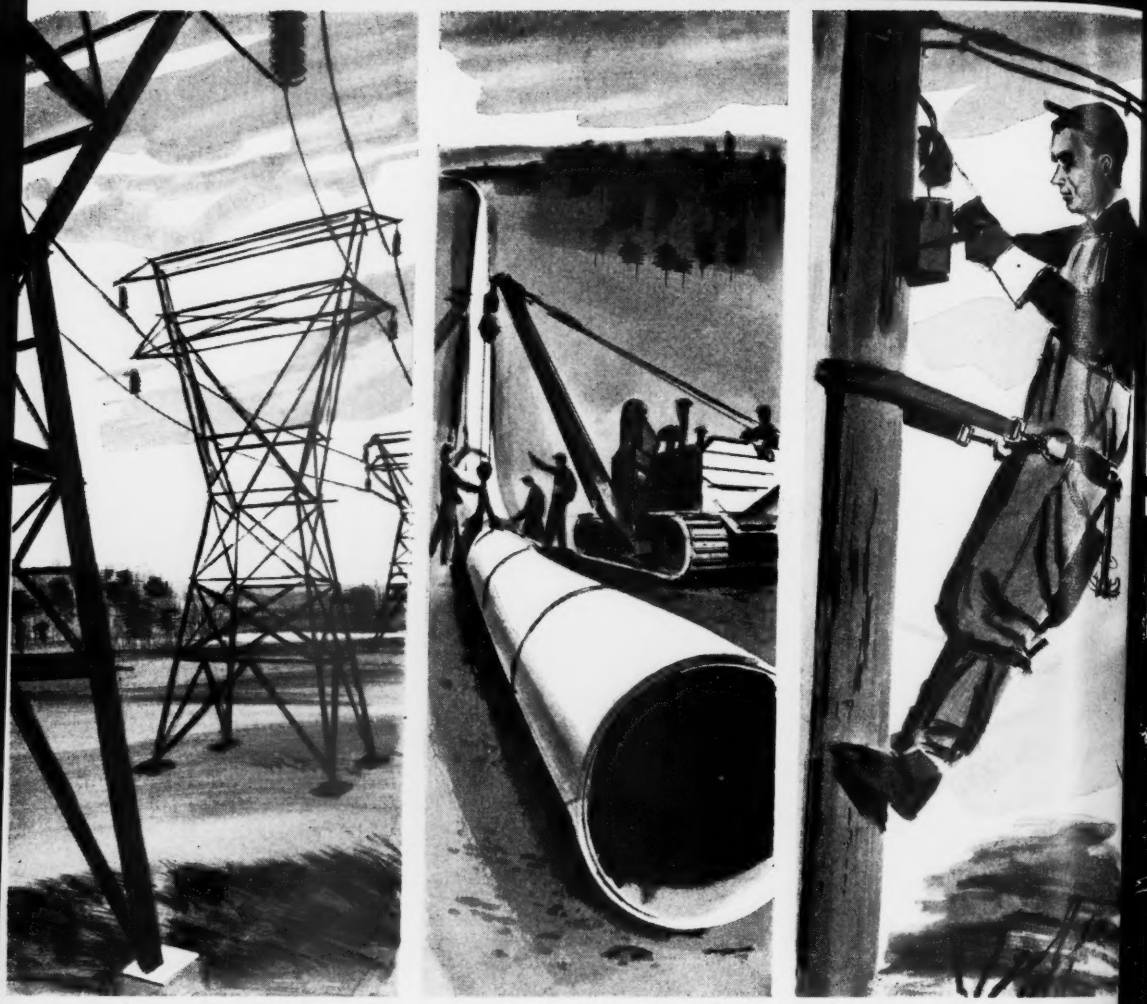

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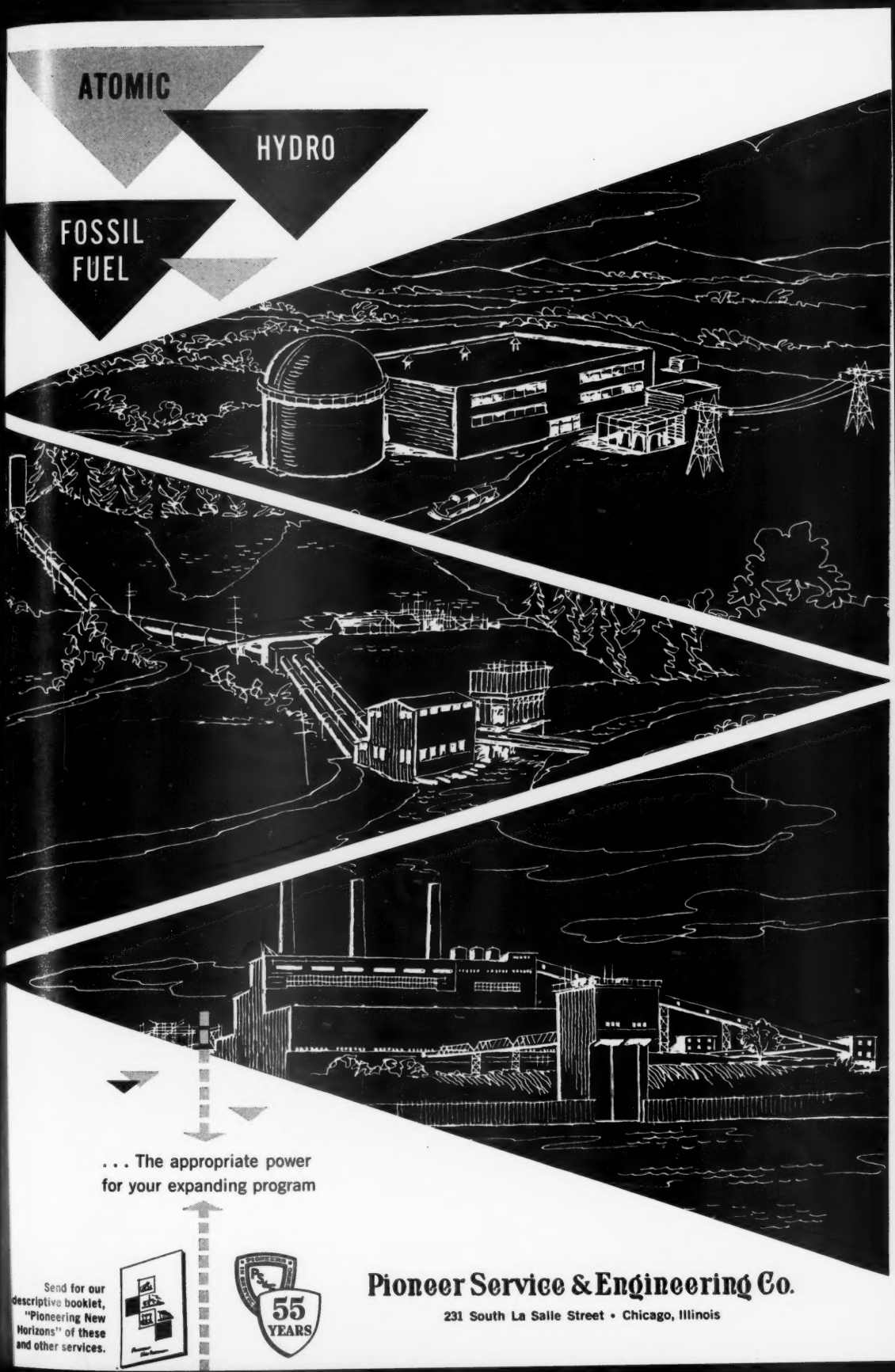

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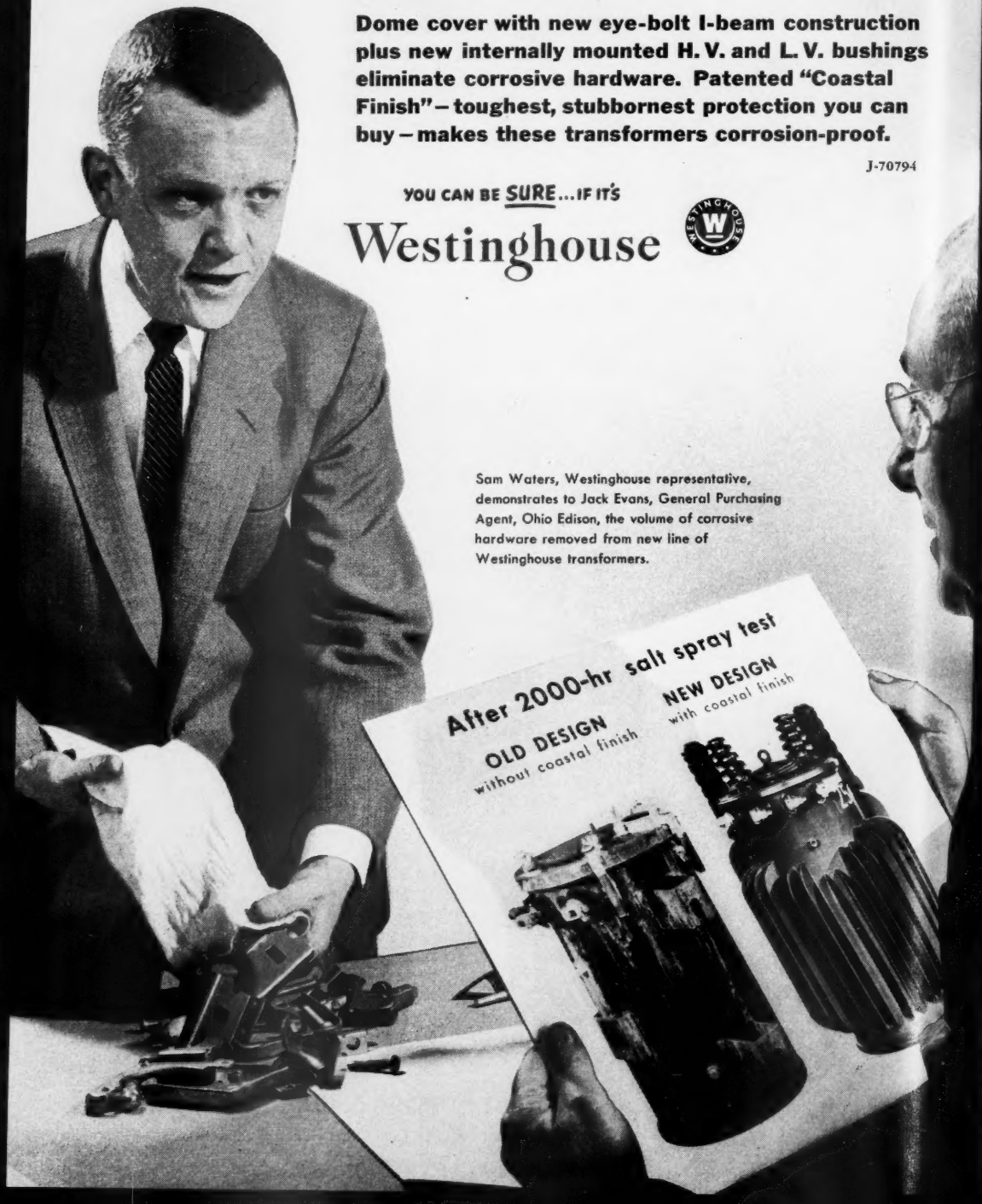
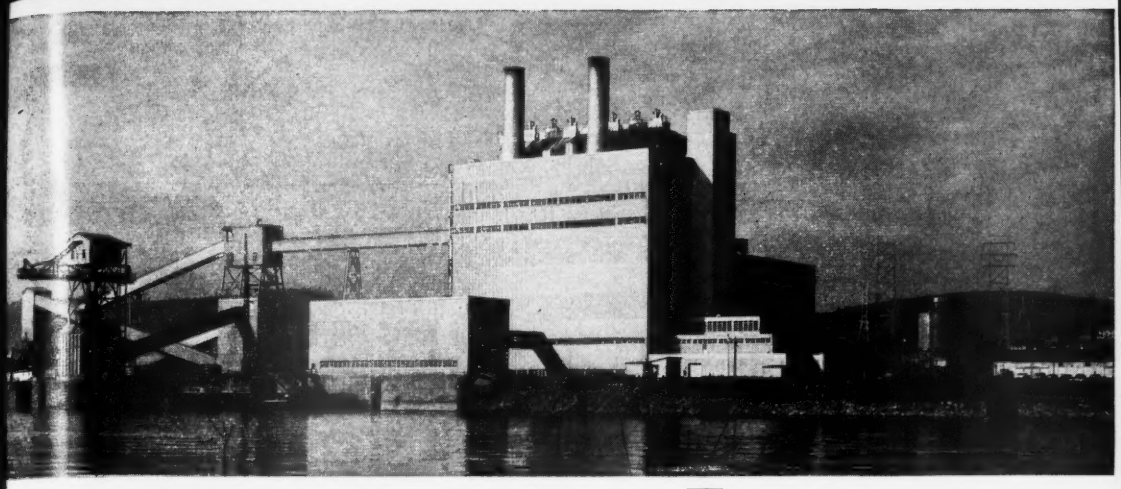


Sam Waters, Westinghouse representative, demonstrates to Jack Evans, General Purchasing Agent, Ohio Edison, the volume of corrosive hardware removed from new line of Westinghouse transformers.



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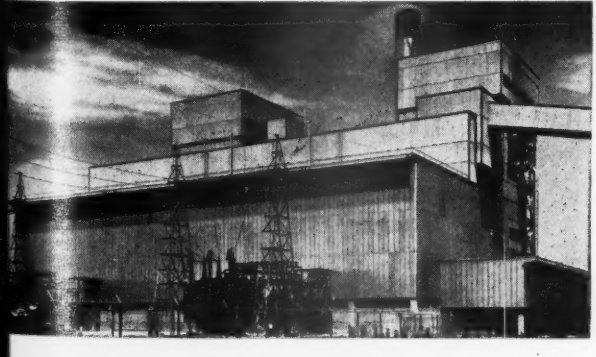
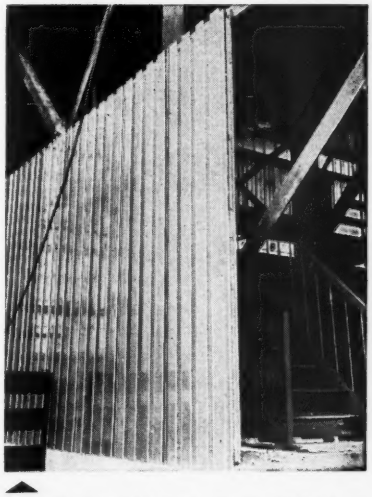


Q-Panel walls grace the new Elrama Power Plant (above) near Pittsburgh. It was designed by Duquesne Light Company's Engineering and Construction Department. The Dravo Corporation was General Contractor.



Q-Panel walls (above) go up quickly in any weather because they are dry and hung in place, not piled up.

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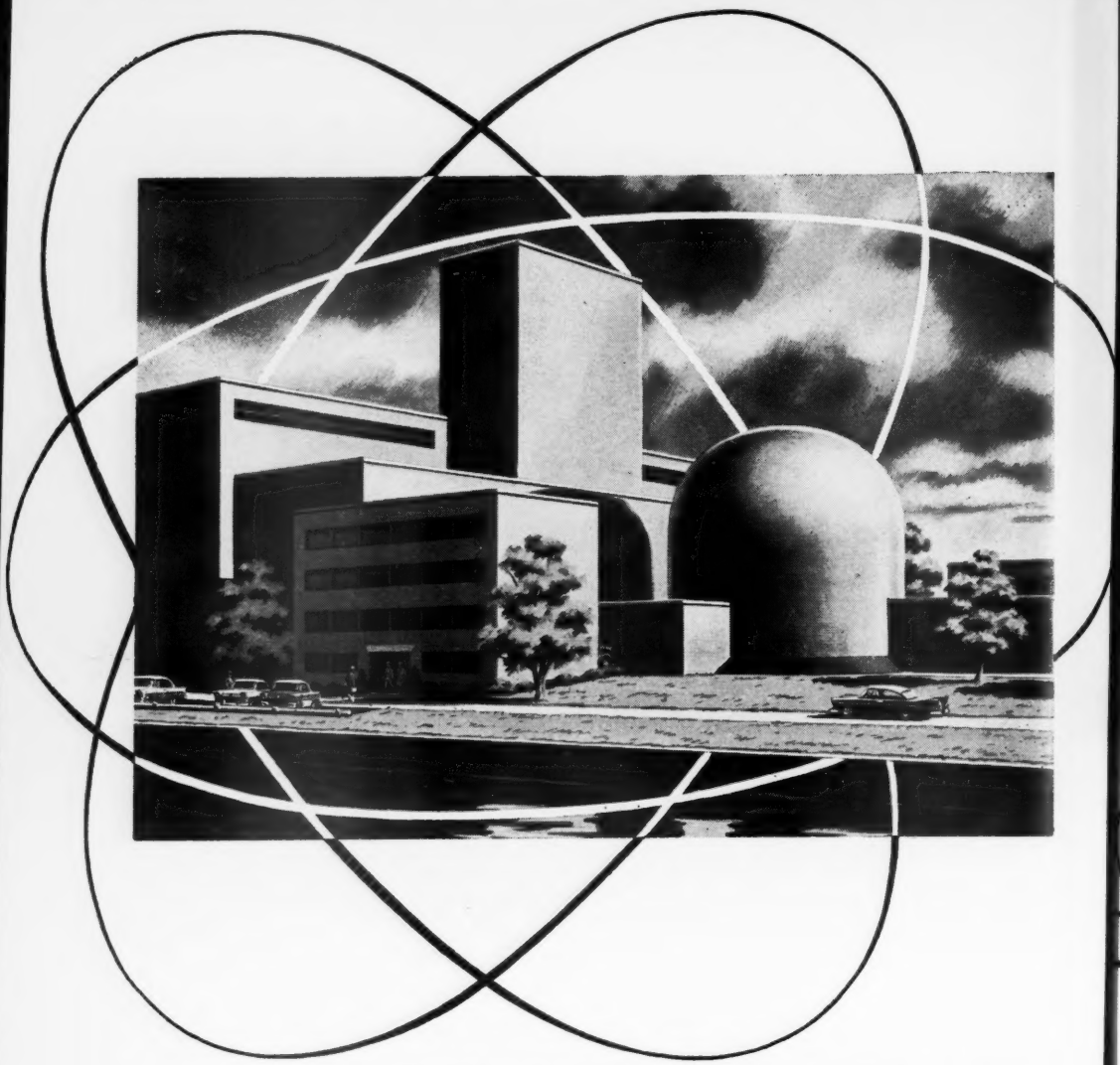

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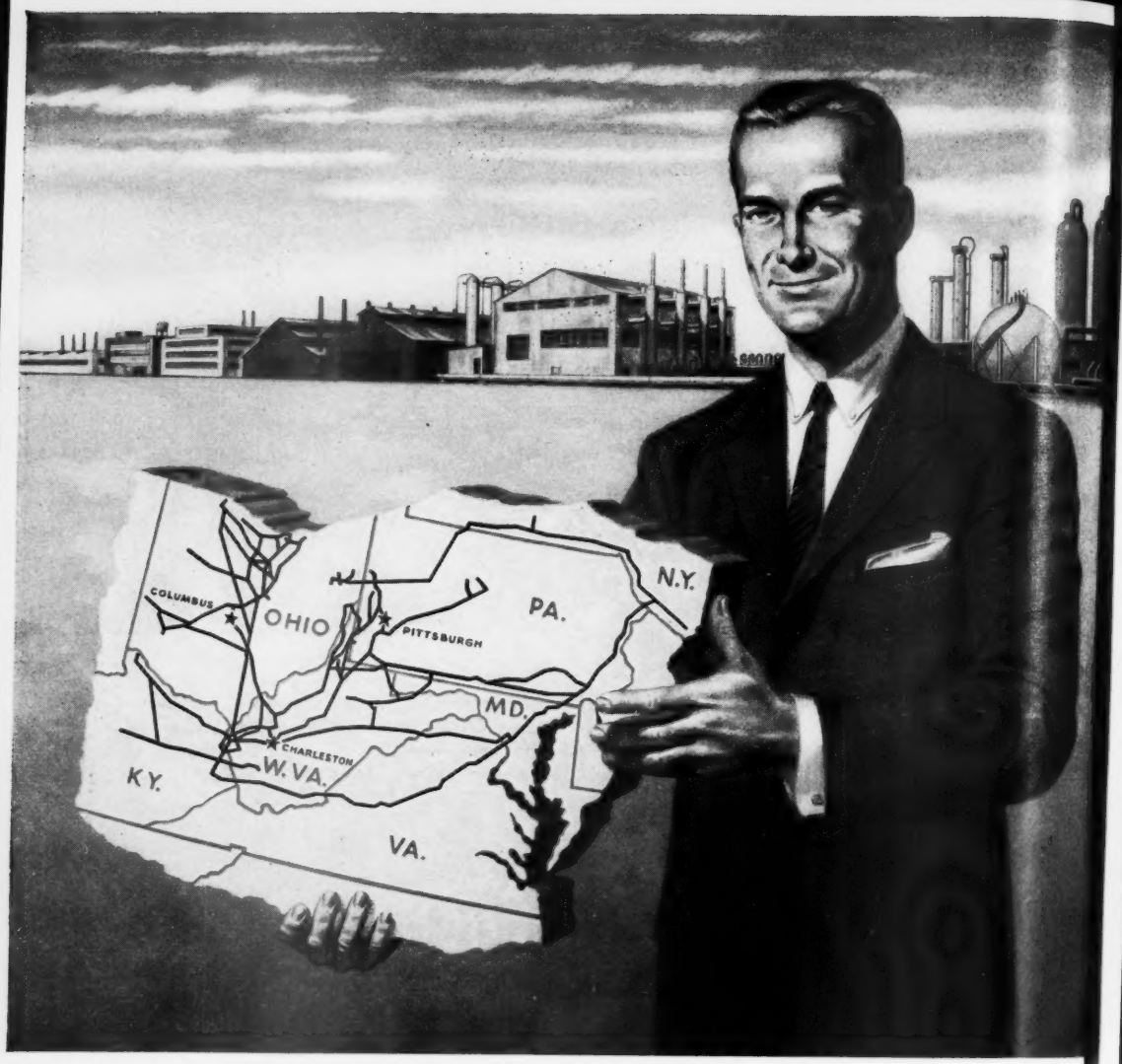

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Thursday—9 *Pennsylvania Electric Association, Electrical Equipment Committee, begins spring meeting, Pittsburgh, Pa.*	**Friday—10** *Public Utilities Advertising Association ends 3-day annual convention, Cleveland, Ohio.*	**Saturday—11** *National Association of Electrical Distributors will hold annual convention, Washington, D. C. May 26-29.* ***Advance notice.***	**Sunday—12** *Liquefied Petroleum Gas Association begins annual meeting, Chicago, Ill.*
Monday—13 *Aeronautical and Navigational Electronics begins national conference. Dayton, Ohio.*	**Tuesday—14** *Institution of Gas Engineers begins meeting, London, England.*	**Wednesday—15** *Pacific Coast Electrical Association begins annual convention, San Francisco, Cal.*	**Thursday—16** *American Right of Way Association begins national conference-seminar, Chicago, Ill.*
Friday—17 *American Water Works Association ends 6-day annual conference, Atlantic City, N. J.*	**Saturday—18** *American Institute of Mining, Metallurgical, and Petroleum Engineers ends 2-day New England regional conference, Boston, Mass.*	**Sunday—19** *Texas Independent Producers and Royalty Owners Association begins meeting, Galveston, Tex.*	**Monday—20** *National Fire Protection Association begins annual meeting, Los Angeles, Cal.*
Tuesday—21 *Pennsylvania Gas Association begins annual meeting, Pocono Manor, Pa.*	**Wednesday—22** *Illinois Telephone Association begins annual convention, Peoria, Ill.*	**Thursday—23** *Association of American Railroads, Communications Section, ends 3-day annual session, Toronto, Ontario, Canada.*	**Friday—24** *Southeastern Gas Association begins annual spring planning meeting, Savannah, Ga.*

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Vanguard of Public Service

Pole line extension in Henderson, Nevada

Public Utilities
FORTNIGHTLY

VOL. 59, NO. 10 MAY 9, 1957

Our Defective Federal Project Power Marketing Law

In the Flood Control Act of 1944, Congress made the Secretary of Interior the marketing agency for all power developed at federal multipurpose projects under the act. Pursuant to this the government signed a 30-year contract in 1952 to furnish power to Reynolds Metals Company in combination with Arkansas Power & Light Company. Now it appears the government is losing out of pocket nearly $2 million a year and it wants the contract annulled. What can and should be done about this unworkable provision of law in fairness to all parties? This first of a 2-part series discusses this case and the second part will discuss the need for remedial legislation.

Part I. *The Reynolds Metals-Arkansas Power Case*

BY ROBB M. WINSBOROUGH*
VICE PRESIDENT, MIDDLE WEST SERVICE COMPANY

CONGRESSIONAL reconsideration of the water resources program, and particularly § 5 of the Flood Control Act of 1944, may be hastened by two recent developments in the Southwest.

The Department of the Interior has filed with the Federal Power Commission a request to change and to increase the power rates of the Southwestern Power Administration. A part of this request is that FPC repudiate a 30-year power contract executed in 1952 by the then Secretary of the Interior, Oscar Chapman. The contract is a three-way agreement among

* For additional personal note, see "Pages with the Editors."

the government of the United States, represented by the Department of the Interior, Arkansas Power & Light Company, and Reynolds Metals Company.

The Department of the Interior now contends that because of § 5 of the Flood Control Act of 1944 the former Secretary of the Interior was without authority to bind the government for so long a period of time in a power sales contract which specified the rate to be charged throughout the 30-year period.

The other development which may hasten congressional review of the effects of the preference clause and other provisions of § 5 is an audit report of the Comptroller General of the United States which was released on September 26, 1956.

This audit report was for the fiscal year ended June 30, 1955. In it, for the first time, the Comptroller General reviews in one audit the combined operation of the Southwestern Power Administration and the hydroelectric dams for which SPA is the marketing agency, under § 5.[1]

ON September 26, 1956, Joseph Campbell, Comptroller General of the United States, transmitted the report to the Speaker of the House of Representatives.

In the audit report, the Comptroller General recommends that the Congress enact legislation to end the confusion which exists concerning (1) the criteria and policies for allocation of costs in multipurpose projects, (2) the period for reimbursement of the federal capital investment, (3) the rate of interest to be paid on the unamortized balance, (4) the payment of interest during construction, and (5) the subsidies to be given nonpower users of various multipurpose projects.

The Comptroller General also reported that from the time SPA was created in 1943 until the end of the fiscal year June 30, 1955, SPA and the dams from which it markets hydroelectric power and energy had lost a total of $13,425,531. The net loss for 1955 alone was $5,950,713.

Operating expenses alone exceeded revenues by $1,900,517[2] in 1955. In effect, the United States government paid $1,900,517 for the privilege of giving away electric power and energy for which the electric companies in the area would gladly pay the government more than $8 million at the dam sites.

FOR some time the Department of the Interior has been cognizant of these losses by SPA. In January, 1956, the Department of the Interior and SPA had developed a proposed increase and revision of SPA rates which Interior desired to submit to FPC for approval and confirmation, as required by § 5. They were thwarted by the activities of government ownership proponents in Congress, who forced through Congress a bill freezing SPA rates for eighteen months.[3]

It was vetoed by President Eisenhower, and on November 16, 1956, the Department of the Interior filed with the Federal Power Commission a revised request to change SPA power rates.[4]

In this request the Department of the Interior states:

> . . . The proposed rate schedules applied to estimated power sales will produce revenues sufficient to (1) reimburse the federal government, in approximately fifty (50) years for the investment of the hydro projects that have been allocated to power production

and the investment in government transmission facilities utilized in connection with marketing of the power, including two and one-half per cent (2½%) interest on the investments; and (2) pay the lease and purchased power costs incurred under contractual arrangements with certain generating and transmission power co-operatives, costs of purchasing power from other utilities in the area, and operating and generating costs associated with the production, transmission, and marketing of the power.

FPC is requested to give confirmation and approval to four new rates which will replace former SPA "Rate A." The details of these rates are given in the footnote.[5]

As a part of its request to FPC, the Department of Interior has asked FPC to repudiate the rates in the 30-year Department of Interior-Arkansas Power & Light-Reynolds Metals contract and to confirm and approve substitution of a new and higher rate schedule "P-1" in lieu of rates specified in that contract.

Arkansas Power & Light Company states that if this were done it would result in an annual increase of $1,098,000 in cost to Arkansas Power & Light if the quantities of power and energy provided for in the contract were delivered. This is an increase of 58.7 per cent over the existing contract rates.[6]

Understandably, Arkansas Power & Light Company and Reynolds Metals Company have protested the action of the Department of the Interior in seeking to increase the contract rates. The two companies contend the contract is a legal, valid, and binding contract with the government and that FPC is without authority to revoke it. They contend that if the validity of the contract is to be questioned, it must be done in litigation and that the only proper place to do it is in a court of competent jurisdiction.

THE facts set out in the protests of Reynolds Metals Company and Arkansas Power & Light Company lead one to believe that if these two companies do not have a valid long-term contract with the government it is difficult to see how one can be made under the present § 5 of the Flood Control Act of 1944.

In brief, the sequence of events was as follows:

❦

¶ "CONGRESSIONAL *reconsideration of the water resources program, and particularly § 5 of the Flood Control Act of 1944, may be hastened by two recent developments in the Southwest. The Department of the Interior has filed with the Federal Power Commission a request to change and to increase the power rates of the Southwestern Power Administration. . . . The other development which may hasten congressional review of the effects of the preference clause and other provisions of § 5 is an audit report of the Comptroller General of the United States which was released on September 26, 1956.*"

Shortly after the outbreak of the Korean War, on October 5, 1950, Chairman Symington of the National Security Resources Board (now Senator Symington), announced to representatives of Reynolds, Alcoa, and Kaiser Aluminum that there would be an over-all expansion of one million tons of additional primary aluminum capacity in the United States. At that time the total United States primary aluminum capacity was some 725,000 tons.

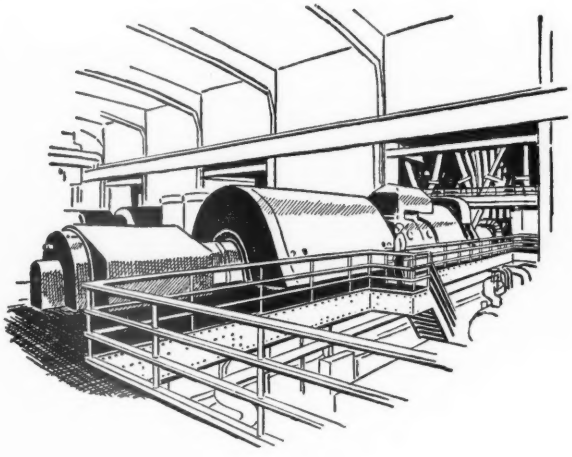
This was the so-called "first round" of aluminum expansion in connection with the Korean emergency. To finance its proportion of this program Reynolds Metals borrowed $85 million on its own resources and credit to build plants and power facilities desired by the government for the production of aluminum.

Before the new plants could be put into operation the worsening international situation led the government to call for a "second round" of expansion of aluminum production facilities. In October, 1951, one year after the request of Symington for the first expansion, the Administrator of the Defense Materials Procurement Agency (DMPA) requested Reynolds Metals to undertake to construct and operate 60,000 additional tons of primary aluminum capacity. It was suggested at the same time that Reynolds Metals explore the availability of power in Arkansas for such purposes.[7]

THE Administrator of SPA suggested to Arkansas Power & Light Company that the peaking capacity of the government's Bull Shoals multipurpose hydro project could be co-ordinated with the off-peak steam capacity of the AP&L system to provide power for the production of aluminum at a new location somewhere in Arkansas, if agreement could be reached as to price and terms. Reynolds became interested in the proposal and in the fall of 1951 negotiations were started among Reynolds, SPA, the Department of the Interior, and Arkansas Power & Light Company.

Reynolds initially took the position that the additional 60,000 tons of aluminum capacity desired by the government could best be created by increasing the capacity of the Reynolds Metals plant at Corpus Christi, Texas, by 35,000 tons and the Lister Hill, Alabama, plant by 25,000 tons. These expansion programs could be financed more easily and would cost less than the construction of new facilities. Reynolds was induced to change its plans because of assurances given that sufficient power would be made available in Arkansas at prices which would be commensurate with economic operation of an aluminum facility. At that time Reynolds was buying TVA power for 2.7 mills and was paying only 2 mills at its reduction plants in Longview, Washington, and Troutdale, Oregon. Reynolds was generating power in its own plant at Jones Mills, Arkansas, for less than four mills and was purchasing power from Arkansas Power & Light Company at Jones Mills for less than four mills.[8]

ESTABLISHMENT of the Reynolds plant in Arkansas was entirely dependent upon a satisfactory power contract. Reynolds would need to raise approximately $75 million to finance the additional facilities. The inducement to prospective lenders was that Reynolds was in a position to make available an adequate supply of



The SPA-Arkansas Power Pact

"THE power contract, in brief, provides for this: SPA sells to AP&L 150,000 kilowatts of generating capacity and 2,400 hours' use thereof, or a total of 360 million kilowatt-hours per year, which AP&L can schedule by days and hours to make it available during the hours when AP&L experienced peak demands from Reynolds and its other customers. AP&L would supplement the available hydro energy with its own steam capacity and energy during the remaining hours of the day, month, or year. AP&L takes delivery at the dam site. SPA does not furnish any transmission facilities for the benefit of the AP&L contract."

bauxite at reasonable cost and had a long-term power contract at rates which compared favorably with those of the Pacific Northwest, after due consideration was given to the reduction in transportation costs attributable to the proximity of the alumina and aluminum reduction plants. These two important features remained primary factors throughout the financing and were made conditions of all of the final loan documents.[9]

The final documents included a bond purchase agreement, a mortgage and deed of trust, a loan agreement, and a "V" loan guaranty agreement. The Administrator of DMPA advised the Secretary of the Treasury that the government would guarantee the loan under § 301 of the Defense Production Act. The DMPA Administrator requested the Secretary of the Treasury to permit national banks to participate in the financing. In the formal application to the Federal Reserve Bank of New York for a "V loan guaranty" of the $76,750,000 loan under the terms of the Defense Production Act, the power

contract featured prominently as a part of the security offered. The loan was made on June 12, 1952.[10]

NEGOTIATIONS among Reynolds, Arkansas Power & Light, and SPA were protracted because the contract was a complex one. On January 29, 1952, the agreement was finally signed by the Secretary of the Interior, Oscar L. Chapman, vice president of Arkansas Power & Light Company, R. E. Ritchie, and vice president of Reynolds Metals Company, Walter L. Rice.[11]

On March 4, 1952, AP&L filed the contract for approval with the Arkansas Public Service Commission. After a hearing, that commission approved the contract and the rates by its order of March 10, 1952.

Section 5 of the Flood Control Act of 1944 required the Department of the Interior to obtain confirmation and approval of the contract and rates by the Federal Power Commission. The contract, as originally drafted, provided for a fixed rate at which the government power and energy would be sold to Arkansas Power & Light during the entire 30-year term of the contract. FPC advised that it would not approve the contract unless the contract provided for a periodic redetermination of rates. This proposal was not acceptable to Reynolds, which claimed that a fixed power rate over the entire 30-year term of the contract was necessary to justify the large investment required for its new plant.

AFTER subsequent negotiations a supplemental agreement, dated April 17, 1952, was entered into. This agreement provided for limited rate increases under the contract. FPC issued an order on April 23, 1952, approving the schedule of rates and charges, as amended, but covering only the first five-year period of service under the contract. FPC refused to confirm and approve the contract provisions with respect to rates during the remaining twenty-five years of the contract term.

At this point, Reynolds flatly stated that it was not interested in proceeding further with the negotiations. Reynolds referred again to the necessity for a fixed rate or rates during the entire 30-year contract term.

Shortly thereafter, Interior suggested to Arkansas Power & Light and Reynolds a slightly different proposal, which would provide for limited escalation at the end of each five-year period of service under the contract. As a result of this proposal, the parties entered into a new supplemental agreement, dated April 25, 1952, containing the changes suggested by Interior.

On April 28, 1952, the Federal Power Commission issued its final order in Docket No. E-6407, confirming and approving the schedule of rates and charges embodied in the contract for the entire 30-year term of the contract, and specifically found:

> The schedule of rates and charges embodied in the agreement, as amended, and further modified on April 25, 1952, conform to the standards as set forth in § 5 of the Flood Control Act of 1944.[12]

THE power contract, in brief, provides for this: SPA sells to AP&L 150,000 kilowatts of generating capacity and 2,400 hours' use thereof, or a total of 360

million kilowatt-hours per year, which AP&L can schedule by days and hours to make it available during the hours when AP&L experienced peak demands from Reynolds and its other customers. AP&L would supplement the available hydro energy with its own steam capacity and energy during the remaining hours of the day, month, or year. AP&L takes delivery at the dam site. SPA does not furnish any transmission facilities for the benefit of the AP&L contract.

AP&L agrees to deliver up to 110,000 kilowatts of capacity with the necessary accompanying energy to Reynolds Metals Company's plant near Arkadelphia, Arkansas, at a rate of approximately 3.7 mills. Any increase in such rates to Reynolds resulting from redetermination by the Secretary of the Interior shall not exceed 10 per cent of the initial rate during the sixth through the tenth year of service under the agreement, 15 per cent during the eleventh through the fifteenth year, 17½ per cent during the sixteenth through the twentieth year, 20 per cent during the twenty-first through the twenty-fifth year, or 22½ per cent during the twenty-sixth through the thirtieth year. It is further provided that no rate so determined by the Secretary of the Interior "shall be higher than would be required to meet the standards of § 5 of the Flood Control Act of 1944 if equally applied to all customers of Southwestern Power Administration that are similarly situated." Arkansas Power & Light Company pays the federal government 6 mills per kilowatt-hour for the first 22 million kilowatt-hours per month and 3 mills per kilowatt-hour for the next 8 million kilowatt-hours per month. For dump energy furnished by SPA, Arkansas Power & Light Company pays SPA 1.25 mills and Reynolds Metals Company pays 1 mill as a carrying charge.

ACTING on good faith in this contract, Arkansas Power & Light Company spent more than $5.5 million to construct new transmission lines and associated facilities to carry out the contract. Reynolds Metals Company proceeded with the construction of a new aluminum plant near Arkadelphia. The aluminum plant went into operation on December 31, 1953. Up to the middle of December, 1956, the Arkadelphia plant had produced 280 million pounds of aluminum, 86 million pounds of which had been "called" by the government and sold to the national stockpile at the market price on the day of delivery.

The Department of Interior now seeks to repudiate the power contract. It does

¶ "INTERIOR . . . *argues that the contract is discriminatory because the rate is lower than some other contracts SPA has with other customers. In addition, Interior argues that the contract is illegal because there were so many unknown factors in the situation at the time the contract was made, reciting these points: It was a period of inflation; the final allocation of construction costs had not been made; and water conditions were uncertain.*"

so on the grounds that the contract violates § 5 of the Flood Control Act of 1944. Specifically, Interior argues that the contract violates § 5 because the contract does not "encourage the most widespread use," is not "consistent with sound business principles," will not "recover the capital investment allocated to power over a reasonable period of years," and violates the requirements that "preference in the disposition of power and energy must be given to public bodies and co-operatives."[13]

INTERIOR also argues that the contract is discriminatory because the rate is lower than some other contracts SPA has with other customers. In addition, Interior argues that the contract is illegal because there were so many unknown factors in the situation at the time the contract was made, reciting these points: It was a period of inflation; the final allocation of construction costs had not been made; and water conditions were uncertain. Interior asserts, "The Congress did not delegate to the Secretary, or to the Federal Power Commission, the unbridled authority to gamble. It commanded them to exercise sound business judgment and authorized them to act only within the limits imposed by that command."[14]

THE conclusion of the Department of Interior argument is, "No principle is more fundamental to the concept of constitutional democracy that is the distinguishing characteristic of our system of government than the principle that ours is a government of laws and not of men. Without question it lies within the congressional prerogative to authorize a provision such as that here presented. But we are concerned here not with what the Congress may do; it is what the Secretary of the Interior and the Federal Power Commission could do that concerns us. What they were and are empowered to do is to act as the agents of the Congress in administering a statute in accordance with the standards it has prescribed. They cannot legislate. Yet that is what was attempted. The attempt, being unauthorized, must fail."[15]

This conclusion of the argument brings us back to the contention of the Comptroller General of the United States, that only Congress can remedy the deficiencies which exist in § 5 of the Flood Control Act of 1944.

PART II *of this article will appear in the next issue of the* FORTNIGHTLY.

Footnotes

[1] Audit report to the Congress of the United States, Arkansas, White, and Red river basins power system and related activities, Corps of Engineers (Civil Functions), Department of the Army, and Southwestern Power Administration, Department of the Interior, for the fiscal year ended June 30, 1955, by the Comptroller General of the United States.

[2] Page 58, audit report, SPA for fiscal year ended June 30, 1955.

[3] See PUBLIC UTILITIES FORTNIGHTLY, September 27, 1956, "Fixing Government Power Rates in the Southwest," by Robb M. Winsborough, p. 433.

[4] Repayment and Average Rate Determination Study, Southwestern Power Administration, October, 1956. FPC Docket Nos. IT-5971; IT-6056; E-6337; E-6340; E-6407.

[5] Rate A provided an average rate of 5.5 mills at 50 per cent load factor. Rate A was: Monthly charge of $1.35 per kilowatt of billing demand, including 200 kilowatt-hours, plus 4 mills per kilowatt-hour for all additional kilowatt-hours used.

The four new rates, abbreviated, are as follows:

Schedule F-1, Wholesale Firm Power Service, demand charge $1.60 per kilowatt of billing demand, energy charge 2 mills per kilowatt-hour for first 150 hours' use of billing demand, 3 mills per kilowatt-hour for next 290 hours' use, 5 mills per kilowatt-hour for all in excess of 440 hours' use.

Schedule P-1, Wholesale Peaking Power Service, demand charge $1.60 per kilowatt of billing demand, 2 mills per kilowatt-hour for first 150 hours' use of billing demand, 3 mills per kilowatt-hour for next fifty hours' use of billing demand, with a stipulation that energy charges be applied so that on an annual fiscal year basis the energy charge shall be 2 mills per kilowatt-hour for the first 1,800 hours' use of demand and 3 mills per kilowatt-hour for all use in excess of 1,800 hours.

In both Schedules F-1 and P-1 there are certain discounts for taking service from SPA integrated system network at voltages of 69 kilovolt or higher.

Schedule IC, Wholesale Power Service Interruptible Capacity, demand charge 4½ cents per kilowatt per day available in the discretion of the government to wholesale power customers under appropriate contracts.

Schedule EE, Wholesale Power Service Excess Energy, 1½ mills per kilowatt-hour when available in the discretion of the government to wholesale power customers under appropriate contract.

[6] Protest of Arkansas Power & Light Company before the Federal Power Commission in the matter of the United States Department of the Interior, Southwestern Power Administration, Docket Nos. IT-5971; IT-6056; E-6337; E-6340; E-6407, page 15.

[7] Protest of Reynolds Metals Company before FPC, pages 8, 9.

[8] Protest of Reynolds Metals Company, pages 10, 14, 15.

[9] Protest of Reynolds Metals Company, page 21.

[10] Protest of Reynolds Metals Company, pages 21, 22.

[11] Protest of Arkansas Power & Light Company, Exhibit 1.

[12] Protest of Arkansas Power & Light Company, page 11 and Exhibit 3.

[13] Section 5, Flood Control Act of 1944, is as follows:

> Electric power and energy generated at reservoir projects under the control of the War Department and in the opinion of the Secretary of War not required in the operation of such projects shall be delivered to the Secretary of the Interior, who shall transmit and dispose of such power and energy in such manner as to encourage the most widespread use thereof at the lowest possible rates to consumers consistent with sound business principles, the rate schedules to become effective upon confirmation and approval by the Federal Power Commission. Rate schedules shall be drawn having regard to the recovery (upon the basis of the application of such rate schedules to the capacity of the electric facilities of the projects) of the cost of producing and transmitting such electric energy, including the amortization of the capital investment allocated to power over a reasonable period of years. Preference in the sale of such power and energy shall be given to public bodies and co-operatives. The Secretary of the Interior is authorized, from funds to be appropriated by the Congress, to construct or acquire, by purchase or other agreement, only such transmission lines and related facilities as may be necessary in order to make the power and energy generated at said projects available in wholesale quantities for sale on fair and reasonable terms and conditions to facilities owned by the federal government, public bodies, co-operatives, and privately owned companies. All moneys received from such sales shall be deposited in the Treasury of the United States as miscellaneous receipts.

[14] Memorandum of views of the Secretary of the Interior. Legal analysis of validity of rate provisions of Article 1 of contract ISPA514, as amended, in light of § 5 of the Flood Control Act of 1944. Filed with the Federal Power Commission, January 18, 1957, by the solicitor of the Department of Interior before the Federal Power Commission in the matter of the United States Department of Interior, Southwestern Power Administration.

[15] *Ibid.*

The Stakes in the Power Industry

"In the development of electric power rests our entire business structure. There is no business that a man can enter upon which our progress so depends as it does on this public utility.

"There is a contest on in this country as to whether we will have public or private power; whether private enterprise will carry on its business, or whether it will be carried on from Washington.

"By the power of taxation, the government can change our entire social structure. Men still have the tyranny that has risen from power since the beginning of time."

—John A. Sibley,
Chairman of the board,
Trust Company of Georgia.

Utility Common Stock Financing

Should utilities offer new issues of common stock through the medium of stock rights? This article claims such financial methods should be avoided because rights tend to dilute per share earnings. The author cites several factors which he believes can accomplish a steady upward trend in per share earnings.

By FREDERICK W. PAGE*

COMMON stock money, entailing the greatest risk, is the most expensive capital and has the greatest effect on the over-all cost of money. Improving the investment standing of common stock will reduce over-all cost, and will simplify the financing of utility bonds and preferred stocks. Any bond buyer will put great weight on the investment standing of utility common.

Having spent the entire twenty-four years of my business life studying the utility industry and purchasing large amounts of utility common stocks, I feel that I know what investors are looking for and expect when they buy common stocks. I believe that I can suggest a few ways in which stocks can be made more appealing to the investing public and thereby reduce cost of financing.

What can be done to make utility stocks attractive to investors? Obviously, when utilities offer common shares, they must be attractive relative to other securities that are available to investors. Therefore, such shares are competing with securities of other companies and industries as well as with government and municipal securities. Can utilities offer equal or better investor appeal than do these other securities?

* Vice president, Tri-Continental Corporation. For additional personal note, see "Pages with the Editors."

THE three main appeals are safety, income, and appreciation. Emphasis can vary from the trustee who is primarily interested in safety to the speculator whose main interest is a substantial capital gain. But in between these two extremes are the bulk of the investors who are looking for all three features in varying degrees.

Up until the early post-World War II years utilities successfully attracted capital by offering a relatively high degree of safety and a good yield. From an economic point of view, utility securities have well-above-average safety. These companies sell essential services at very low cost so that the public is getting an outstanding bargain when it buys. Because of this and the public's desire for better, easier living, the utility industry has an exceptionally strong growth record. It is only in the political area that utility securities carry risk.

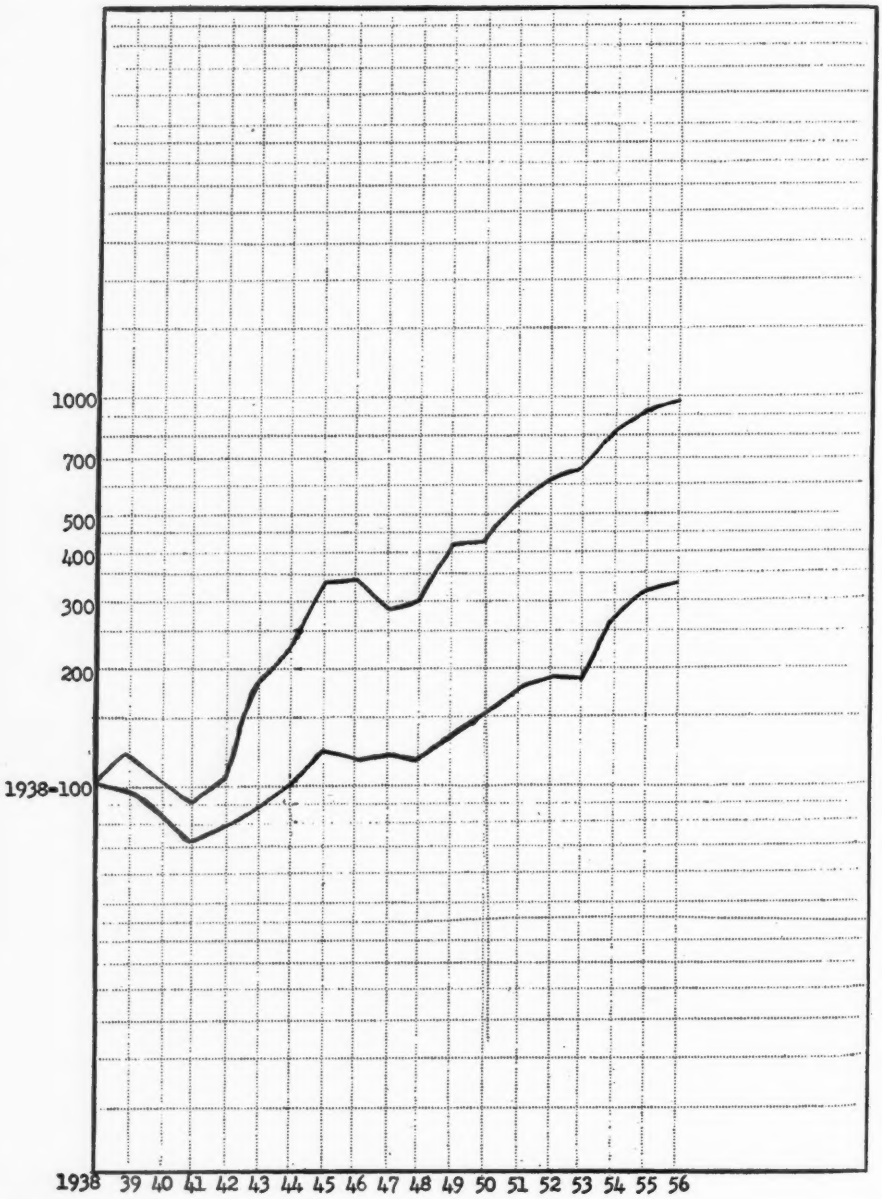
Utilities' common stocks, except for the past year, gave relatively attractive yields. An investor could obtain 1 to 2 per cent better income on utility common stocks than he could on bonds or preferred stocks. Thus, stocks having safety and offering good yields did not have to give promise of capital gains in order to attract investors. Unfortunately, in my opinion, too many utility executives still operate on the basis that the appeals of safety and stable dividends are all that are necessary to attract capital and that anything more than a minor appreciation potential can be ignored.

IN this connection, I am convinced that during these postwar years there has been a major shift in investor emphasis from income to appreciation potentials. This is why such popular stocks as Aluminum Company of America, Amerada, Gulf Oil, Humble Oil, International Business Machines, Minneapolis Honeywell, Minnesota Mining & Manufacturing, National Cash Register, etc., yield less than 2½ per cent. Why else would investors buy Florida Power & Light common yielding only 3 per cent when they could buy Minnesota Power & Light first mortgage bonds to yield 4.6 per cent, or Pacific Power & Light preferred stock to yield 5¾ per cent? They are looking for appreciation and weighting it rather heavily.

THE reasons for this shift in emphasis to appreciation are quite clear. With current high tax rates, ordinary income has lost a great deal of its appeal to wealthy investors. For a person in the 40 per cent or higher tax brackets, municipal bonds give a much higher net yield than a utility common stock can possibly do. Today such an investor, if his primary investment objective is income, will be much better off investing in tax-exempt bonds. They give greater safety, they are available in an increasingly generous quantity, and to give the same net yield after taxes utility stocks would have to yield 7 to 15 per cent. The only possible reason such an investor will choose a common stock is because he believes that a common stock will appreciate enough so that even after paying a capital gains tax of 25 per cent, he will still be better off taking a lower net yield amounting to 3 to 11 per cent annually. This requires an annual appreciation of about 5 per cent on a common stock just to break even after taxes as compared to an investment in tax-exempt bonds. When the safety of princi-

CHART I

UTILITIES vs. INDUSTRIALS



pal is considered, utility stocks should be capable of showing considerably better than an annual 5 per cent appreciation to compete successfully with tax-exempt bonds.

ANOTHER reason for the shift in investor emphasis to appreciation is the changing value of the dollar. Following the stock market crash of 1929, thousands of investors decided that never again would they put money in stocks. Throughout the 1930's and the war years they invested heavily in bonds. As bonds matured and were paid off, these investors found that they again had taken substantial losses in terms of the purchasing value of their dollars. With this declining value of the dollar, more and more investors are investing in stocks for the purpose of obtaining appreciation as a partial hedge against inflation. They buy the stocks that they believe will show the best appreciation and this is a trend that I am confident will continue for some time in the future.

With both high tax rates and inflation apparently with us for some time to come, one can no longer weight appreciation lightly if one is to successfully compete for the investors' dollars. If we give it substantial weighting, we find that financing can be done more easily and cheaply.

AS to the ability of utility common stocks to show as much appreciation as industrial stocks, note the accompanying chart (Chart 1, page 660) bearing on this matter. One line shows the market action of a group of utility stocks, and the other line shows the market action of the Dow-Jones index of industrial stocks. Both are plotted on the basis of 1938 equaling 100, which is the starting point on the chart. Which line is the utilities, and which the industrials? If one did not know there was a catch in the question, it would seem natural to say the upper line was the industrial index. It has had sharper fluctuations and has shown a better long-term gain than the lower line, and so fits into the popular concept of how industrial stocks behave as compared to utilities. Actually, the upper line reflects the market action of holdings of utility common stocks and the lower line shows the market action of the Dow-Jones industrial stocks. Incidentally, these latter stocks include most of the very popular blue chip companies—the leaders in their field.

The better market performance of the utilities is due almost entirely to the fact that, for our Tri-Continental utility portfolio, we have selected nonurban utilities serving a growing area where we could see above-average gains in earnings per share. Large city utilities and those with slow growth in per share earnings have been avoided. The limited amount of switching that was done did not have an important effect on the end results.

NOTE, also, from the chart that the utilities made their biggest gain against the industrials in the years 1942-46. These were the years when the basis for the breakup of the holding companies was being prepared and the investor had an opportunity that will probably not be available again. In order to eliminate these distortions, I have prepared a table (Table I, page 662) showing the market action of the two groups with 1947 equaling 100. During this 10-year period when we had almost constant inflation, which is

TABLE I

MARKET PERFORMANCE OF UTILITY PORTFOLIO
COMPARED TO INDUSTRIAL STOCKS

	Annual % Change		*Index 1947 = 100*	
Year	*D-J Indust.*	*Utilities*	*D-J Indust.*	*Utilities*
1947	+ 2.2	—16.8	100.0	100.0
1948	— 2.1	+ 4.2	97.9	104.2
1949	+12.9	+40.4	110.5	146.3
1950	+17.6	+ 1.0	129.9	148.8
1951	+14.4	+24.6	148.6	185.4
1952	+ 8.4	+16.0	161.1	215.1
1953	— 3.8	+ 6.7	155.0	229.4
1954	+43.8	+26.2	222.9	289.5
1955	+20.8	+13.0	269.3	327.1
1956	+ 2.3	+ 6.5	275.5	348.4

supposed to be bad for utilities, there were only four years when the utilities failed to better the industrial showing. In 1947 and 1950, the comparative showings were not such as to make the utility investor particularly happy. In 1954 and 1955, although the utility showing was not as good as that of the industrials, the utility investor could not be entirely unhappy with gains of 26 and 13 per cent, respectively.

For the full 10-year period, the utility gains have been superior to the industrial gains, so I submit that utilities can offer appreciation potentials to compete with industrial stocks. I shall outline how I think this can be accomplished, but please note that the average annual appreciation is far greater than the "better than 5 per cent" that I said earlier was necessary to compete with tax-exempt bonds.

As to the criticism that when I talk appreciation, my main interest is to get the stocks up so that we can sell out at a nice profit, it has no basis in fact. An analysis of my company's utility common stock portfolio shows that 75 per cent of the stocks which we now own are in companies in which we have had substantial investments for periods ranging from seven to twenty years. Considering that several of these are companies that came out of holding companies only seven years ago, it is evident that we are long-term holders on a substantial majority of our utility investments. As to the other 25 per cent of our utility stocks, we added

eight new names between 1953 and 1956. The funds for these purchases came not only from the sale of some industrial stocks, but also from the elimination of a few utility holdings. We do occasionally eliminate commitments in utilities, but when we do, it is usually for some good reason. Either we do not like the trend of local regulation or we feel that the management is pursuing wrong financial or other policies. Only very occasionally do we liquidate positions on a wide scale. The last time this was done was in 1940 when we felt that utilities would be a poor market risk under war conditions. If we were short-term investors, and my purpose in urging utilities to realize the importance to investors of appreciation were just so we could make a quick profit, we would not be holding some stocks which we have held for a long time and could have sold at 100 per cent profit. While we frankly like to see our investments appreciate, we also maintain that this appreciation potential is an important element in low-cost financing and if recognized will operate not only to the company's benefit but to the consumer's benefit as well. Thus, it is extremely important to a healthy private industry facing a tremendous capital program.

Tailoring Utility Stocks for Appreciation

SINCE great emphasis is put on the appreciation potential when selecting common stocks, what features do investors look for when selecting a stock for capital appreciation? Utilities can adopt many of these features and thus give their stocks more investor appeal under today's market conditions.

The market value of a stock is based on various factors. Book value is an element in a stock's value, but under current market conditions it is a minor factor, and market values bear little relationship to book values. Some stocks sell at less than book, whereas others sell at many times book value. Yield is another element in market value but it, too, is a minor factor.

As pointed out earlier, many of the most popular stocks yield less than 2½ per cent. The yields on stocks which we own range from one-half per cent to 8 per cent, and even among our utilities there is a wide range of 2 per cent to 6 per cent. It thus seems clear that stocks do not currently sell on the basis of yield. There have been times in the market when yield was more heavily weighted, but for several years it has been relatively unimportant.

The more we study the common stock market, the more convinced we become that the most important single factor in the market value of a stock is its prospective earnings per share. I would like to emphasize the words "prospective" and "per share." Past earnings are of interest to the investor mainly as an indication of what can be expected in the future. And investors are not nearly so interested in the number of dollars available for the common as they are in the per share figures.

ALTHOUGH per share earnings are the fundamental basis for the market price of a stock, there is another important factor in the formula. This is the price-to-earnings ratio. The evaluation of earnings can vary widely between stocks. Why should there be such a wide variation? The answer is confidence.

Not only is the all-important cost of equity capital improved if higher earnings and increased investor confidence can be obtained, but the improved investment standing is usually reflected in lower cost of prior capital. Customers will benefit over the long run, and the private industry will be better able to withstand the inroads of socialistic ventures.

IT is for this reason that I deplore the growing trend toward the "cost-of-money" theory in regulation and feel that anyone who abets it is doing a great disservice to the industry and our private enterprise system. Under that theory there is no incentive to lower cost of capital and in fact it cannot be done. It would be practically impossible to increase investor appraisal of utility earnings because as price-to-earnings ratio went up, the cost of equity capital would go down. This would result in rate reductions or the equivalent which would eliminate the growth in per share earnings. Investor confidence would be shaken and this would be reflected in turn by a lowering of the price-to-earnings ratio. Once investor confidence is lost, it takes a long time to rebuild it. Cost of capital would be considerably higher if not prohibitive, and government competition would be given a boost.

At this point it is evident that two main proposals for lowering cost of capital are (1) increase your per share earnings, and (2) take steps to improve investors' appraisal of your earnings which is reflected in the price-to-earnings ratio at which your stock sells. The first step goes a long way toward realizing the second step.

THERE are not many ways in which a utility with its return limited by regulation can increase its per share earnings. It is obvious that physical expansion will not increase per share earnings if the return on over-all investment remains constant, if capital structure is kept in a constant proportion, if cost of capital is unchanged, and if there is no important reinvestment of earnings. It is because of this that many feel that regulated utilities cannot show the required growth. I do not subscribe to this point of view. I grant that substantial year-to-year gains in per share earnings may not show up, but this may not be necessary. Steady gains, even though small, will support investor confidence.

A steady upward trend in per share

¶ "UP *until the early post-World War II years utilities successfully attracted capital by offering a relatively high degree of safety and a good yield. From an economic point of view, utility securities have well-above-average safety. These companies sell essential services at very low cost so that the public is getting an outstanding bargain when it buys. Because of this and the public's desire for better, easier living, the utility industry has an exceptionally strong growth record. It is only in the political area that utility securities carry risk.*"

earnings can be accomplished if intelligent use is made of the five factors which will give higher per share earnings. These factors follow:

Rate of Return

Of all factors which affect per share earnings, rate of return is the most important. Where a full return is already being earned, this factor is probably useless as a means of improving earnings. However, it is our observation that under present inflationary conditions very few utilities are earning a maximum allowable return.

It is the duty of management to do whatever it can either through sales promotion or cost reductions to improve the return. If these economies fail, then and only then should rate relief be sought. Rate increases, by and large, are undesirable, but if necessary there should be no hesitation. Unless investor confidence can be maintained, the cost of capital will rise over a period of time and customers will suffer from poorer service and eventually from higher rates. With utility services at such bargain prices, I am sure that most consumers are more interested in service than they are in rates at the present time.

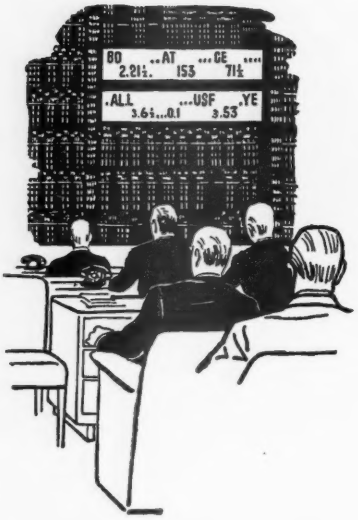
Capital Structure

Changes in capital structure can have an important bearing on per share earnings. If a company chooses to build up the proportion of its capital structure represented by common equity, it results in proportionately heavy offerings of common stock, and this dilutes the per share earnings. Conversely, if the proportion represented by common declines, per share earnings will be increased, everything else being equal. Therefore, I think there is much to be gained by a judicious use of your capital structure. This begs the question, "What should a capital structure be?"

There is no one pattern that can be applied to all segments of the industry or to all companies within a given segment. A capital structure should be tailor-made to fit the risks involved. Consequently, those who preach standards of capital structures are theorists, in my opinion, who have harmed the industry.

At the time that El Paso Electric was to be divorced from its holding company, the SEC issued a decree stating that the minimum capital structure for an electric company should be 50 per cent debt, 25 per cent preferred, and 25 per cent common. This started a fashion. Many companies decided that they had to be much better than the "minimum" and in this they were encouraged by many outside well-intentioned kibitzers. The rush was on to build up equities. First a 30 per cent goal was set, but then this was raised to 35 per cent, 40 per cent, and higher.

At the time, I was consistently against this build up, and with hindsight I am sure the build up was a mistake. During the period of this build up, we were having the most favorable bond market we have ever had or will likely ever have again. On the other hand, the common stock market was relatively low in that stocks were selling at subnormal price-to-earnings ratios on an historical basis. The result was proportionately small offerings of low-cost prior securities and relatively large offerings of high-cost common stocks. This was expensive financing.



Avoiding Earnings Dilution

"THE final factor affecting the trend in per share earnings is the policy adopted in connection with common stock offerings. The best price possible should be obtained and all unnecessary dilution should be avoided. As stated earlier, the timing should be synchronized with changes in your rate of return. Beyond this the price level is important. If stock sells above its book value, per share earnings increase, everything else being equal. If stock sells below book value, it dilutes per share earnings. The most desirable situation would be to sell stock at successively higher prices on each subsequent offering."

WAS the cost of this added financial strength worth while, or was it an unnecessary extravagance? I doubt that we, in our lifetime, will be called upon to face conditions as unfavorable to utility operations as were encountered during the depression of the 1930's. It was so severe and long drawn out that families finally doubled up and the utilities actually lost customers on balance for the only time in their history. And how did the industry weather the storm? On today's standards of accounting most utilities had little or no common equity, and some had actual deficits. Yet, outside of a few extremely pyramided holding companies, there were very few bankruptcies. Some operating companies went into arrears on preferred dividends but by and large this was about the worst that happened. Now utilities are in a much stronger position to meet such unfavorable conditions. Although I do not recommend it, I believe that utilities could go to a 10 per cent common stock ratio without real risk of bankruptcy, even under 1932 conditions.

The point that I would like to make is that I do not think some bogey such as 35 per cent or 40 per cent should be set as a goal. The ratio could drop below 30 per cent if it is necessary to maintain an upward trend of per share earnings.

The use of changes in capital structures as a factor in obtaining an upward trend in earnings should be synchronized with the other factors, especially rate of return. In periods when it appears that rate of return is likely to slip, debt can be increased so that financing with the lowest-cost capital will be possible. Conversely,

when the rate of return is expected to expand either because of some new profitable load, a major economy, or a rate increase, advantage should be taken of this opportunity to build up equity, but not with so many shares that the gain in earnings would be fully diluted.

Reduction in Cost of Prior Capital

UTILITIES do not have much control over the cost of prior capital. By and large this is established by the law of supply and demand in the money market. Unfortunately, this factor is working against an improvement in per share earnings at the present time in that the cost of new prior capital is higher than that of the prior capital now on the books. As new capital at higher rates is issued the average over-all cost of prior capital increases. There are certain things which can be done to some extent.

Flexible financing planning is one way. All securities markets are in a constant state of flux and at times are receptive to one type of security and at other times to another type. Therefore, utilities should be in a position to offer whatever security the market is most receptive to. I have seen companies adopt certain patterns of financing and stick to them rigidly even though market conditions are poor. Such a pattern might consist of first selling common stock, then selling preferred, and then selling bonds, and repeating this in rotation with no thought given to existing market conditions for the security being offered. I know of companies which finance construction by bank loans until the bank loans reach certain levels, at which time they are permanently financed. This is fine during a period of declining interest rates, but it is wrong when interest rates are rising. In the latter case it is better to issue your securities early in anticipation of your needs. Of course, we cannot always determine in advance what type of security the market will be receptive to or whether interest rates will be rising or falling at the time of financing, but with enough study better than even judgment should result.

THERE are a few other suggestions that can lead to an improved cost of prior capital. Offerings should be scheduled during periods when financing calendars are not too congested, such as February-April. Security analysts should have all the information that they desire made available to them—fully and frankly. They are an important group when cost of capital is concerned. Appearances before analyst group meetings are important, but I recommend individual calls with prior notice so that questions can be prepared.

The amount by which the cost of prior capital can be affected is limited, but if it can be improved by only 5 or 10 basis points it is worth while. Assuming a 6 per cent return and bond money at 4½ per cent, the difference of 1½ per cent works to the benefit of the share owner. If it can be increased to 1.6 per cent, it represents an improvement of over 6 per cent.

Reinvestment of Earnings

ANOTHER factor which can lead to improvement in per share earnings is the reinvestment of a portion of these earnings. I am often asked what proportion of earnings should be paid out in dividends and I have heard theorists argue this point at great length. In my opinion,

there is no specific percentage that fits all market conditions or all companies. The current market appears to be ignoring yield except in certain securities, but there are times when the market puts a great deal of weight on yield.

WHAT the pay-out for any company should be depends on what the company can do with the retained earnings. If a company will issue a proportionate amount of prior securities and can earn a full return on the total investment, the return on the reinvested earnings can be quite large. Under these conditions the company is justified in having a low pay-out. In this instance the proportionately large reinvestment of earnings at a high return can contribute importantly to an upward trend in per share earnings. On the other hand, if a company uses the reinvestment of earnings as a means of building up its equity ratio and so does not issue a proportionate amount of prior securities, or if it is unable to earn a good return it is not justified in retaining a large portion of its earnings. Since the stockholder can reinvest these funds at a better rate, it is against his interest to force him to add to his investment. For such a company the reinvestment can have only a minor effect on the trend of earnings.

Some small increase in the dividend rate each year is highly desirable and is impressive when the long-term record is examined. Retained earnings are also good from the stockholders' point of view, so that pay-out can be kept as low as possible consistent with a small annual increment in the dividend rate.

Common Stock Offerings

THE final factor affecting the trend in per share earnings is the policy adopted in connection with common stock offerings. The best price possible should be obtained and all unnecessary dilution should be avoided. As stated earlier, the timing should be synchronized with changes in your rate of return. Beyond this the price level is important. If stock sells above its book value, per share earnings increase, everything else being equal. If stock sells below book value, it dilutes per share earnings. The most desirable situation would be to sell stock at successively higher prices on each subsequent offering.

Largely because rights tend to dilute per share earnings, I strongly recommend against the offering of stock through

¶ "UTILITIES *do not have much control over the cost of prior capital. By and large this is established by the law of supply and demand in the money market. Unfortunately, this factor is working against an improvement in per share earnings at the present time in that the cost of new prior capital is higher than that of the prior capital now on the books. As new capital at higher rates is issued the average over-all cost of prior capital increases. There are certain things which can be done to some extent.*"

rights. Some stockholders are in favor of rights under the false impression that it gives them a good investment opportunity or that it is a form of an extra dividend. From the long-term point of view, they are better off if without offerings through rights. Those who subscribe may be better off than those who do not or cannot subscribe, but actually it is the transfer agent, the printer, and the underwriter who get the most benefit from a rights offering. It is an expensive form of financing for the utility. The only benefit of such an offering is the good will of some short-sighted stockholders. To get even this, the rights must have some value; and to give them value, the stock must be priced below the market. This means issuing more shares to get in the same number of dollars than the stock priced at the market. The resulting unnecessary dilution will not help per share earnings.

In addition to being expensive, a rights offering usually depresses the stock during the rights period and most stockholders sell their rights on a depressed market. Where a rights issue has been fully subscribed, the chances are that a majority of the subscriptions came from rights that were bought on the market and not from the original stockholder.

Other Factors Leading to Investor Confidence

My main thesis has been that a steady upward trend in earnings and dividends is essential to a high appraisal of your earnings which, in turn, will give low-cost financing. However, there are other factors that influence investor confidence, and the most important of these is management.

Under our free enterprise system, management operates a company for the benefit of its common stockholders. If this were not so, utilities might just as well be publicly owned. Of course, it is to the long-range interest of the stockholder to make sure that the customer is getting the best possible service at reasonable rates and that labor is being adequately paid. But we believe that these latter two objectives will be better served under the profit system which leads to more economical operations. Since this is so fundamental, it is generally assumed that management always has as its primary objective the interests of its share owners.

More Work in Less Time

"There is a way to shorter workweeks and to more pay. We will lay a small wager that within another lifetime the American economy—if it's not too upset by tinkering—will go far towards that goal. The way is through new and better tools that permit each worker to produce more with less labor. When that happens there will be more jobs and more purchasing power because the whole economy will be larger and more fruitful. That's the path the American economy has been following this past half-century, and at an increasing rate."

—Editorial Statement,
The Wall Street Journal.

Sampling Meter-testing Techniques

Substantial savings in utility operating costs are expected by the Virginia Electric & Power Company from an improved approach to meter testing through the application of modern sampling methods. The procedure provides a means of selecting for test those meters which may require calibration and reduces the unproductive and time-consuming operation of testing meters which are within the limits of allowable accuracy.

By W. CAPERS HARRISON*

During the past decade the electric utility industry has experienced tremendous growth, both in the number of customers served and in peak demands. This growth has been accompanied by a steady upward trend of operating costs. In previous years these increased costs were offset to a large extent by major technological improvements in turbines and generator design which improved operating efficiencies. For example, in spite of the increased delivered cost of fuel, production expense in the United States has dropped from 4.96 mills per kilowatt-hour in 1950 to 4.42 mills per kilowatt-hour in 1955, or a decrease of 11 per cent. On the other hand, transmission and distribution expense per customer has risen from $14.13 in 1950 to $16.84 in 1955, or an increase of 19 per cent.

With respect to investment costs per customer, these have also shown extremely large increases. For example,

* System meter supervisor, Virginia Electric & Power Company. For additional personal note, see "Pages with the Editors."

while in 1950 the average transmission and distribution investment per customer amounted to $282, it had risen to $380 in 1955, or an increase of 35 per cent.

It can be said, therefore, that during that period production efficiencies were largely instrumental in holding down the rates charged for electric service, but it is doubtful whether further improvements of the magnitude shown above will be accomplished in this area during the next five years. It would seem, therefore, that it will be in the area of transmission and distribution expense that major improvements will have to be made.

WITHIN the transmission and distribution function, the meter department has been frequently overlooked in the past, and it is here that there is promise not only of substantial savings in the cost of operation but of doing the job in a more efficient and useful manner.

To date, the improvement in efficiency and accuracy of the watt-hour meter as a measuring device has not been utilized to the fullest. The number of meters, particularly in the single-phase categories normally used for residential service, has now grown to astronomical proportions; and the testing of these meters has become a very expensive and time-consuming task. Recognition of these facts has led to the development of the new plan of meter testing.

The Regulatory Background

THE Virginia Electric & Power Company has recently devised a new plan for the regular inspection and testing of single-phase watt-hour meters in service that has met with the approval of the Virginia State Corporation Commission and the North Carolina Utilities Commission. The West Virginia commission will be approached in the near future. Virginia Electric & Power Company operates in the states of Virginia, North Carolina, and West Virginia. Each of these states has the customary legal requirement that the state's regulatory commission may prescribe such rules and regulations for the testing of metering equipment as may seem appropriate to the commission.[1]

IN none of the three states is it necessary for the commission to hold public hearings in order to change the regulations dealing with meter testing. The Virginia State Corporation Commission differs somewhat from the commissions of North Carolina and West Virginia in that it does not promulgate its own rules for meter testing but rather allows each utility to present its proposed method and, if reasonable, it may be approved. The North Carolina and the West Virginia commissions both have printed rules and instructions covering various phases of utility operations, including the testing of meters, and all utilities within the states normally are required to follow such instructions. The state of North Carolina has not revised its published rules as to meter testing for several years but has granted special permission from time to time to vary from these set rules.

In the case of this new test plan submitted to the North Carolina commission by the Virginia Electric & Power Company, the staff engineer recommended it to the commission, and it readily granted

[1] Section 56-246 Code of Virginia; § 62-75 General Statutes of North Carolina; § 2557 West Virginia Code.

a two-year trial period, with the intention of seriously considering incorporating this plan in the next revision of its published rules.

This new test plan now being used by the Virginia Electric & Power Company in Virginia and North Carolina should prove far superior to the older plan that has commonly been used where meters were tested on a flat periodic cycle.

The New Technique of Testing

For many years meter accuracy reports have been compiled regularly, listing the results of periodic tests made on all meters in service. The records of such tests have always shown that the great mass of meters will always retain their accuracies for extended periods, and even the very oldest meters are found extremely dependable when not abused by overloads or unusual conditions. The more modern meters are, of course, superior in many ways and give every evidence of sustaining their accuracy under all conditions for their expected life.

It has been known that we have been testing great numbers of meters, to find the negligible few that would drift from an acceptable accuracy. This has always appeared to be wasteful in time and money, and it was from analysis of these facts that a better method of testing meters in service was sought.

By application of modern sampling methods currently in use in market research and industrial quality control, a method which may be termed selective testing was developed within the Virginia Electric & Power Company. In designing such a sampling method it was necessary to adapt statistical mathematics to the peculiar problem of meter testing, and Ebasco Services Incorporated gave assistance in this field.

The basic advantage of this selective meter-testing plan is that it assures that the time spent on meter testing will be utilized more efficiently, with consequent saving in operating costs. A modern sampling procedure will point out the types of meters that may be in need of recalibration; and, therefore, minimum time is wasted in testing meter groups where the need for recalibration is not indicated.

Through the use of modern sampling procedures, data of measured reliability with respect to the performance of various meter types and service under varying conditions of use may be obtained. This is practically impossible under the periodic testing system formerly used. Meter types

¶ "During *the past decade the electric utility industry has experienced tremendous growth, both in the number of customers served and in peak demands. This growth has been accompanied by a steady upward trend of operating costs. In previous years these increased costs were offset to a large extent by major technological improvements in turbines and generator design which improved operating efficiencies.*"

which may not retain accuracy for extended periods of time will be disclosed by the sampling procedure, will be tested more frequently than every eighth year, which was the approved practice, and will be subject to earlier retirement.

The advantages of the selective plan may be summarized as follows:

1. Sampling provides a means for determining the meters or groups of meters which require recalibration.

2. It permits concentrated meter-test activity on such meters.

3. It indicates meter types which are not holding calibration and thus might need either servicing or retirement.

THE manufacturer's type and serial number will indicate which meters contain the modern improvements and may be used as a key for classification purposes. Under the proposed plan of the Virginia Electric & Power Company, a sample of approximately one per cent, or 8,000 meters, will provide adequate information concerning the types of meters requiring concentrated testing. After selection, testing, and analysis of the sample group of 8,000 meters per year, each district of the company will concentrate test activities on those types of meters which the sample indicates are in need of attention. Little or no testing would be required within the group which, according to the sample, is within the established limits of accuracy, since data now available indicate that the newer types of meters may be expected to remain within accepted accuracy limits until scheduled retirement. The Virginia State Corporation Commission and the North Carolina Public Utilities Commission both require a limit of accuracy of plus or minus 2 per cent.

The drawing of a new sample each year will result in an annual appraisal of the relative performance of meters by types in service and of changes in over-all accuracy. Under the former program, no reliable measure of over-all accuracy was possible because of the method used in selecting meters for test. Under the old system of periodic testing, activity in one year may have been concentrated on relatively new meters, while in other years older types would predominate, thus giving false indications of over-all accuracy from year to year.

FOR analytical purposes a sample may be broken down into subgroups by areas or by certain characteristics which affect performance. Such analysis will include a study of performance in areas particularly subject to lightning damage or exposure to corrosive atmospheric conditions.

In future years the types of meters, and adverse locations now affecting meters, may no longer be important; but new problems may develop. Such changes will be revealed as they occur by analysis of the annual sample, thus directing concentrated test activity to areas of greatest need.

The selective testing procedure herein proposed is intended to apply only to single-phase watt-hour meters used without auxiliary equipment. All polyphase meters, and single-phase meters with instrument transformers, will continue to be tested at a regular periodic interval.

Any listing which includes a means for locating all single-phase watt-hour meters

Advantages of Sequential Sampling

"SEQUENTIAL *sampling has the advantages of requiring minimum costs in drawing the sample and of drawing from each district and area a sample proportional to the number of meters in the area or district. This method of sampling is valid without adjustment only if there is no correlation between the meter accuracy and the order in which the meters appear in the sample. For example, if every 100th item subsequent to the random start were known to be 10 per cent high, every sample drawn would also be 10 per cent high. However, there is no reason to believe that any correlation whatsoever exists between the meter accuracy and the position in the file from which the meter would be drawn.*"

could be used as a frame from which the sample could be drawn. Billing stubs, the meter-reading binders, or the billing stencils could be used.

In the Virginia Electric & Power Company the billing stencils have been selected as a frame because they are in a central location, can be used with minimum disturbance to normal routine, and provide a means for mechanical transcription of information. This mechanical transcription minimizes the possibility of error and reduces costs materially. Posting of items drawn from the frame can be made directly to meter test slips or change orders as was done under periodic testing.

THE billing stencils are filed in metal trays in the order that the meter sheets appear in the meter-reading binders. Each district is filed separately. The stencil shows the customer's name, address, and folio number, but does not indicate the meter binder, meter type, or

serial number. From the folio the approximate location in the meter binders can be determined by the meter-reading staff in each district, and the meter-reading sheet can be located. The meter type and serial number are obtained by this means.

Several random procedures can be used for selecting the items in the frame which will fall into the sample. These methods vary in the work necessary to prepare the items in the frame and in the actual drawing of the sample. In this case a sequential sample has been selected. A sequential sample may be drawn by taking every 50th, 100th, or nth item in the frame, starting with an item between one and n, determined at random. In the Virginia Electric & Power Company a table of random numbers was used to determine the starting points, and a separate start was made for each district. If n were placed at 100 and a random start at the 79th item were determined, the sample would consist of the 79th, 179th, 279th, 379th . . . stencils.

The billing stencils are of uniform thickness so that n items need not be counted, but can be determined by measurement. This may introduce a slight deviation from theoretical perfection but not sufficient to warrant the additional cost of counting.

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This method of sampling is valid without adjustment only if there is no correlation between the meter accuracy and the order in which the meters appear in the sample. For example, if every 100th item subsequent to the random start were known to be 10 per cent high, every sample drawn would also be 10 per cent high. However, there is no reason to believe that any correlation whatsoever exists between the meter accuracy and the position in the file from which the meter would be drawn. Hence no correction is needed.

Care in the measurement will be needed in this procedure, particularly in any carry-over from one drawer of stencils to the next. A simple brass gauge, accurately designed to measure 100 stencils, is used by the Virginia Electric & Power Company. As each drawer in the filing cabinets contained approximately 350 stencils, it was necessary to devise some means of measuring the odd quantities at the end of each drawer. A simple slide was designed to fit over the flat gauge, and at the end of each drawer it was spaced to cover that portion less than 100 so that it could be accurately positioned in the next drawer to select the remainder.

THE drawing of the sample was completed by the regular billing clerks, requiring forty-three man-hours to draw the sample and twenty man-hours for refiling. It required twelve and one-half machine-hours to run the stencils through the billing machines for printing on the change orders. In order to assure the accuracy of the sample, a member of the auditing and procedures department stood by for general supervision to verify that no sections of the files were missed. With increased experience such supervision may not be necessary.

Since the frame here is a listing of customers and not a list of single-phase watthour meters, the drawing of every 100th

stencil also drew three-phase meters in proportion to the number of such meters on the system. As we are not concerned with the three-phase meters, these were identified as the change orders were checked with the meter-reading binders; and such meters were eliminated from the sample.

This step involved much less work than would have been required to eliminate all three-phase meters from the stencil file. This step is necessary under the existing system of records but may not be needed in other companies.

Sample Size

THE size of the sample required is primarily determined by the proportion of meters which are beyond acceptable limits of accuracy. The lower the number of meters beyond ± 2 per cent accuracy, in relation to the total meters in service, the larger the sample must be in order to obtain a specified degree of accuracy. For example, if two meters per hundred were expected to be beyond accuracy limits, a larger sample would be required to establish this as fact than if the expected proportion were 25 per hundred. Some reduction in sample size can be made as the group being sampled becomes smaller. Sampling accuracy thus is under control.

The Virginia Electric & Power Company has eleven operating districts and an estimate was made for each district separately, as well as for the system. The sample size was therefore somewhat larger than would be needed if no subdivision had been considered.

The question of the applicability of selective testing to smaller companies, or smaller divisions, presents no real problems. If test activity is concentrated on the more inaccurate meter types, over-all accuracy must improve more rapidly than under a periodic test system. The size of the sample, while lower in number, must be a somewhat higher proportion of the total. The sample points out meter types which need recalibration. The effective agent in improving over-all meter accuracy is concentrated testing in the areas of need. Hence, extreme sampling accuracy is not imperative. A competent statistician can analyze each situation and determine the optimum balance between the conflicting factors.

Summary

IT must be emphasized that the group of meters drawn as a sample are to be used only as the control; and from the

¶ *"THE drawing of a new sample each year will result in an annual appraisal of the relative performance of meters by types in service and of changes in over-all accuracy. Under the former program, no reliable measure of over-all accuracy was possible because of the method used in selecting meters for test. Under the old system of periodic testing, activity in one year may have been concentrated on relatively new meters, while in other years older types would predominate, thus giving false indications of over-all accuracy from year to year."*

detailed analysis of sample tests the geographical areas or meter types in need of concentrated investigation will be determined.

It is this point which should have a great appeal to the engineers of the state commissions, for by such careful selection, concentrated test activity may be directed towards the older meters in order that they may be removed for retirement or recalibration. This plan should prove acceptable for it will not necessarily extend a periodic cycle on the older types of meters, whereas it is perfectly safe and proper to greatly extend the time on the more modern types beyond the generally accepted schedules.

Other advantages lie in the fact that more concentrated attention can be given to meters in locations where lightning may prove to be a hazard, and this plan will also permit regular inspection in those older areas where house wiring may not be up to modern standards and improper connections might be found.

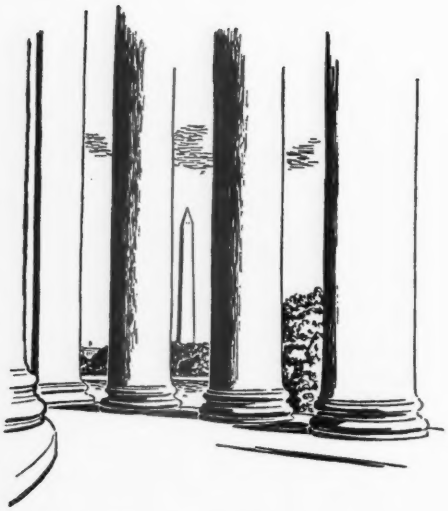
COROLLARY savings may be attained by incorporating the selective testing plan with a centralized production line type of meter laboratory with its many inherent efficiencies. Here the possibility of centralized meter records offers further savings. Selective testing will, of course, place a different burden on records, in some instances necessitating certain changes. "Due date" files, if used, can be eliminated. The cost of changes required might possibly be offset by consolidation or elimination of records now maintained. Concentrated testing among the least accurate groups will result in the recalibration or retirement of such meters with a minimum of work on meters which do not require attention. This will result in the major savings obtainable through the use of the selective testing plan. The number of meters now tested under an eight-year cycle can be reduced by half, or even more, and a greater number of meters beyond tolerable accuracy will be disclosed.

Selective testing is compatible with what is believed to be the ultimate solution of the problem of meter-testing costs—the development of a low-priced single-phase watt-hour meter which will maintain desired accuracy for its life of twenty to thirty years and then be replaced by a new meter.

"IN modern times, the automobile, a product of industry, has widened and enriched lives in a manner impossible to achieve through any controlled economy, for the people cannot have what people do not produce.

"In every city in this country, a movement of profound social significance is now under way. A movement from city dwelling to suburban dwelling. This is bringing about the replacement of city alleys as a place for the rearing of our children by trim green lawns and good gardens, and the basis for that reform is the transportation provided by the automobile in the ownership of the many."

—HAROLD BRAYMAN,
Director, public relations, E. I. du Pont de Nemours & Company.



Washington and the Utilities

The Harris-O'Hara Bill

PERHAPS the most remarkable thing so far about the new Harris-O'Hara Bill to relieve natural gas consumers from the burden of so-called "utility-type" regulation is the fact that it has stirred up comparatively little reaction one way or the other. President Eisenhower said a few kind words for the bill at his regular press conference on April 17th, but that was generally expected. In fact, his comments were in line with the views he had previously expressed on the need for some type of regulation that would ease the problems of the producers without sacrificing protection for the consumers.

The other reactions ran according to form. The bill did not go far enough to suit the Independent Petroleum Association of America. It went much too far to suit Senator Douglas (Democrat, Illinois), who announced that he would lead another fight against its enactment. The Federal Power Commission was reported to be generally favorable but not necessarily unanimous on all points. Mayor Wagner of New York city will lead another mayors' committee to oppose the bill.

Senator Fulbright (Democrat, Arkansas), who cosponsored the legislation which was vetoed last year by President Eisenhower, announced that he had no intention of introducing a bill in the present Congress. Representative O'Hara (Republican, Minnesota) lent bipartisan support from a so-called "consumer state" to the measure originally authored by Representative Harris (Democrat, Arkansas) from a "producing state."

A FEW of the more vociferous "liberal" newspapers and magazines had editorials against the bill, which sputtered and fizzled. Southwestern publications, on the other hand, thought the legislation long overdue.

All told, the reaction was exceedingly mild in comparison with the bitter controversy and sensational charges and countercharges which marked the passage and subsequent veto of the Harris-Fulbright Bill a year ago. It may even be part of the strategy of the supporters of the new Harris-O'Hara Bill to give it the quiet treatment on this year's go around. Certainly, the controversial treatment of 1956

of such legislation was not helpful so far as final enactment was concerned.

Analysis of the Bill

As might be anticipated, the protective clauses of the Harris-O'Hara Bill are weighted somewhat more heavily in favor of the producers than in favor of the consumers. But that was to be expected in view of the basic fact that it is the producers who have been claiming all along that they have the most grievances with respect to the present state of the law. And it must be conceded that the bill does make some obvious efforts to protect consumers' rights which were not apparent in the 1956 legislation, which ended in a White House veto.

In the first place, Harris-O'Hara is not an outright exemption bill, even though it may have that effect, as a practical matter, on producer-pipeline contracts which do not transgress the liberalized standards of the bill. However, the producers would remain very definitely and continuously under the regulatory check of the Federal Power Commission as to any new contracts, or amendments to old contracts, and in some situations even with respect to carrying out prevailing provisions of existing contracts.

There are two novel features of the Harris-O'Hara Bill. One is that it would split the Natural Gas Act into two watertight compartments by making the producers subject to regulatory standards which are entirely different from those applicable to all other gas companies subject to the act as it now stands. The other novel feature is the introduction of an entirely new standard for testing the reasonableness of producer prices—and at the same time a direct prohibition against the use of the cost rate base approach by the FPC in determining producer rates. The new standard is called "reasonable market price."

Even as to the liberalized form of regulation which the bill would make available for producers (and not for any other kind of company under the Natural Gas Act), there would be decided limitations as to application. The new rate controls would not be automatically applicable to all producer contract prices. These controls would have to be invoked by a "protest" of an interested party or parties against any "new" contracts (effective after the bill becomes law) or against the actual price effect of some prohibited escalation provisions found to be operating through an "existing" contract (already in effect). Escalator clauses—which became almost naughty words during last year's scrapping over the old Harris-Fulbright Bill—are quietly classified in Harris-O'Hara as either "definite pricing clauses" (OK) or "indefinite pricing clauses" (not OK).

Unless "protests" are made (the FPC could also act on its own) all prices paid under producer contracts are all right, whether the contract is new or old. Somebody has to make a "beef" before the regulatory machinery starts rolling at all. Even where there is a "protest" filed, FPC authority to change contract prices ceases as soon as it has either certified that the price clauses fall within the permissible "definite pricing clause," or that they are reasonable in themselves, though they may result from an outlawed "indefinite pricing clause" type. (The banned "indefinite" clauses include all escalated increases of the two- or three-party favored nation type, or of the market price redetermination type, or those based on resale—spiral—rate increases.) "Indefinite pricing clauses" are forbidden in all "new" contracts, and are subject to protest in all

"existing" contracts. "Definite" clauses keyed to stated amounts and dates of increases are allowable in all contracts, but subject to testing (as to effect) where protests are filed against new contracts.

THE heart of the Harris-O'Hara Bill is the provision defining the formula to be used by the FPC in determining a reasonable market price of gas sold to producers in the limited class of cases which can be brought before the FPC. Under this formula, the FPC is required to recognize the fact that natural gas is a physical commodity. For this reason, the FPC is prohibited from considering cost or using the traditional rate base approach, keyed to the cost-of-service concept. The FPC is further required to consider (1) whether the price it fixes will insure to the consumer "a continuous and adequate supply" (this is likely to be criticized by opponents of the bill as a disguised protection for producers rather than consumers); (2) whether the contract price was arrived at competitively (arm's-length bargaining); (3) whether the "definite pricing clause" increases are reasonable as keyed to definite amounts and definite timing; (4) whether the quality and delivery terms are reasonable.

The commission is also required to consider (in determining "reasonable market price") "field prices" and other contracts in or out of the producing area, and to base its judgment as to reasonableness within the range of highest, lowest, latest, and other price criteria. "Protests" —in order to invoke FPC review—must be confined to complaints that "new" contracts (a) contain unenforceable "indefinite clauses" or (b) contain "definite pricing clauses" which will result in unreasonable price increases in excess of the market price standard, or (c) shorten the terms of the contract.

CONSUMER and distributor protection provisions of the new Harris-O'Hara Bill, in addition to the banning of "indefinite" escalation increases under new contracts, include the following items: New contracts must be filed and interested parties must be given ample notice and opportunity to "protest" if they so desire. Interested parties may protest. The FPC must hold hearings on such protests. The FPC must make a determination of "reasonable market price" in such cases. It can thereupon throw out conflicting contract provisions and forbid payment of prices under contracts which conflict with its determination of reasonable prices on the "market" basis.

The producers are protected (in addition to provisions already noted) by the right to waive escalator clauses to avoid FPC review. Protested increased rates may be collected after seven months, subject to refund and later adjustment, unless acted upon sooner by the FPC.

Pipelines are protected by provisions allowing full credit for operating expenses, for supply prices paid under valid contracts. They are also assured comparable price allowance for their own gas production. (Pipelines may not, however, pay in excess of valid contract price or fixed valid producer prices.) Producers may not cancel contracts with pipelines by escape clauses designed to avoid FPC jurisdiction, or otherwise withdraw or shorten delivery of a contract obligated supply.

Partisan Fight on Atom Plants

A SHOWDOWN battle between the administration and the Democratic leadership in Congress seems to be shaping up over the Atomic Energy Commission's refusal to agree to legislation by which it would direct its own atom power

plant building program. Chairman Cannon (Democrat, Missouri) of the House Appropriations Committee, who has otherwise been very articulate for a reduction in federal spending, blasted the commission on the floor of the House for its effort to work out a cooperative program whereby such plants would be built primarily by business-managed companies under AEC licenses. Cannon's interpretation endeavored to show that the AEC policy would cost the taxpayers more than if Uncle Sam built such plants himself. But back of the arguments, which were quite confusing, was the very obvious fact that the Democrats in Congress are going to make another drive for a mandatory federal atom power plant building program.

Cannon declared:

> The commission proposes to allocate substantial sums of money to industry with which to pay for research done in government facilities at the instance of industry. The commission interprets this language (in the law) as authorizing it to charge the taxpayers and not the utility. The commission's attitude appears to be that when Congress authorizes it to do something, it should do just the opposite.

Cannon's remarks were part of a lengthy analysis of the AEC's atomic power program that was delivered in part on the House floor on April 16th and printed in full in the *Congressional Record* of April 17th.

CANNON said that before Congress grants the AEC any money for the coming year, "the Joint Committee (on Atomic Energy) should provide authorization for each project under this program with a monetary limit, project by project." He said that the AEC's atomic power program to date "is practically nonexistent. If it ever had any promise of achievement, the facts as known today established inescapably that it has collapsed."

This nation's future atomic power industry is being "seriously challenged," according to Cannon, by Britain, Russia, and the Euratom group.

But the AEC has shown no enthusiasm for having Congress draw up the specifications of its atomic power plant building plans. Chairman Strauss has repeatedly warned that this is a matter for expert judgment in which the commission should have a free hand to experiment and to weigh alternatives. There is every reason to believe that the administration will support the AEC and that if Congress passes the Gore Bill in opposition to the AEC, it will not be approved at the White House.

U. S. Checks Out of Pleasant Valley Picture

ACCORDING to unofficial reports, the White House has turned thumbs down on an Interior Department proposal for a high federal dam at the Pleasant Valley site on the Snake river in Idaho. The feasibility of such a dam was the basis of Interior Secretary Seaton's intervention in proceedings before the FPC on the application of Pacific Northwest Power Company to construct a dam at Pleasant Valley. His action was at the time interpreted widely as an administration retreat from the "partnership" power policy. Now the situation, while still confused, would at least indicate that the administration does not want the federal government, as such, to undertake this development as a direct or exclusive responsibility.

Telephone and Telegraph

House Votes Regulatory Probe

THE House of Representatives has approved an expenditure of $250,000 for an investigation of federal regulatory agencies, including the Federal Communications Commission. The probe will be conducted by a House Interstate Commerce subcommittee, which is authorized to look into the activities and policies of the FCC, the Interstate Commerce Commission, Civil Aeronautics Board, Federal Power Commission, Federal Trade Commission, Securities and Exchange Commission, and the Food and Drug Administration. Representative Morgan Moulder (Democrat, Missouri) has been named chairman of the subcommittee.

The investigation was urged early in this session of Congress by Speaker of the House Rayburn, under whose chairmanship of the Interstate Commerce Committee many of these agencies were first established in the early 1930's. The subcommittee will undertake to discover whether the regulatory commissions are administering the laws as Congress intended, whether they have gone beyond the law by way of administrative regulations, and whether they have maintained an unbiased approach to the regulation of all companies. Charges that some of these agencies have come to be dominated by the industries they regulate will be aired. The most recent accusation of this kind came from Senator Morse (Democrat, Oregon) in an address to the national convention of the Daytime Broadcasters Association in Chicago. Morse told the convention that "objective students of the governmental process have come almost unanimously to the conclusion that the traditional life pattern of regulatory agencies results too often in the agencies being virtually taken over or captured by the industry."

The Oregon Senator singled out the FCC as one regulatory agency which "from all outward appearances will never be found guilty of partiality toward small businesses." It is not known whether Morse will be asked to back up his statements with specific facts and names when the House subcommittee begins its work.

The House authorized the investigation by a 2-to-1 margin roll-call vote. Objections to the probe were voiced by a number of Republicans, including House Minority Leader Martin, on economy grounds.

Wage-hour Exemption

THE recent airing of scandals in the labor movement may serve to give a reprieve to small telephone companies,

worried about moves in Congress to eliminate the exemption in the Wage-Hour Law for telephone exchanges of less than 750 stations. At the start of the present session of Congress, amendment of the law to remove many of the exemptions from minimum wage provisions seemed almost a certainty. But the recent scathing testimony on Teamster Union affairs before a Senate committee appears to have left Congress with little enthusiasm for any labor legislation at all during the present session.

MEANWHILE, representatives of small telephone companies continue to plead their case for retention of the present exemption in the law. The latest pleader was Keith W. Vogt, executive secretary of the Minnesota Telephone Association, before a House Labor subcommittee. Vogt predicted that small telephone companies will be priced out of the market or driven to the wall if they must pay their operators $1 an hour. Vogt used a small company at Marietta, Minnesota, as an example of the effect of a $1 wage for operators. He said the company's rates would have to be raised 44 per cent to assure a reasonable rate of return if the exemption was wiped out.

He added that "utility commissions are becoming more and more reluctant to approve increases in telephone rates primarily because of public opposition," and the result of ending the small exchange exemption would be to drive many companies out of business or into selling out to larger companies. Another possibility, he said, would be a "stampede" to convert small exchanges to dial system, putting more operators out of jobs.

A bill recently introduced by Senator Kennedy (Democrat, Massachusetts), who is chairman of the Senate Labor Committee, differs slightly from other bills to amend the Fair Labor Standards Act which would abolish the small exchange exemption altogether. Kennedy's bill would limit the exemption to an operator providing telephone service through a telephone switchboard located in such operator's home.

Growth of Independents

THE United States Independent Telephone Association reports that the 4,400 non-Bell system telephone companies in the country now operate more than 9 million of the 60,455,463 telephones in the United States, its territories, and possessions. The independents, with a total plant investment of $2,323,052,077, serve 11,000 communities and two-thirds of the geographical area of the country, according to USITA figures.

The latest statistics, as of December 31, 1956, reflect the continuing growth and progress of the industry, which has been expanding at an accelerated pace during the past eleven years to meet the unprecedented demands for telephone service occasioned by population growth, increased usage, and a prosperous economy. While the country's population increased 33 per per cent during the 21-year period from 1935 to 1956, the number of independent telephones soared from 3,185,000 to 9,111,763 or 186 per cent, the USITA survey reported.

A number of major technical advances in telephony have been introduced by the independent industry, including the first practical automatic switching system. Its first commercial application was made more than sixty years ago in an independent exchange at La Porte, Indiana. Today, many independents are installing direct distance dialing, whereby the customer dials his own long-distance numbers without the assistance of an operator.

About 70 per cent of all independent telephones are now dial operated.

At the turn of the century, independents introduced automatic dial telephone systems in such large cities as Chicago, San Francisco, Los Angeles, and Omaha, which cities are now served exclusively by the Bell system. Some of the cities in which the independents operate include Tampa and St. Petersburg, Florida; Lincoln, Nebraska; Rochester and Jamestown, New York; Long Beach, Santa Monica, and the entire suburban area of Los Angeles, California; Fort Wayne and Terre Haute, Indiana; Durham, North Carolina; Sumter, South Carolina; Erie, Pennsylvania; and Lexington, Kentucky.

THE nation's long-distance service is furnished primarily by the Bell system toll network. All long-distance facilities are interconnected with independent telephone company lines. Long-distance traffic between the two segments of the industry is freely interchanged. Agreements are in effect covering routings and divisions of revenues on the interchanged business.

Many independent telephone companies themselves own and operate a large mileage of toll lines, mostly regional in character, all interconnected with the Bell network and with the toll facilities of neighboring independent companies.

Dialaphone

ONE of the most recent developments in telephony—the dialaphone—seems to be catching on as a time-saving device for both individuals and corporations which, for one reason or another, must repeatedly dial the same telephone numbers.

Invented by James Kilburg, president of the corporation which now produces the instrument, the dialaphone looks something like an adding machine without keys.

A crank on the side of the machine brings into view the name of a party to be called. The user then pushes a button and dialaphone dials the correct number. Together with each name is a number in the form of a series of tape perforations. As you turn the crank to get a desired name, the proper number moves into place. The instrument is connected to the telephone and operates on conventional house current. Dialaphone translates the perforations into the electrical message needed to dial the desired number.

KILBURG expects to go into mass production before the end of the year. About 125 dialaphones are now in use, according to Kilburg. Automatic Electric Company, a telephone equipment manufacturer, has the right to distribute the machine to the non-Bell system telephone companies in the United States and companies in other countries. A survey conducted by General Telephone Corporation of California indicates the existence of a market for the machine, particularly for those who make a career of placing telephone calls. Kilburg is optimistic about its acceptance by Pacific Telephone & Telegraph Company. Although still hesitant about the device, a Pacific Telephone official says his company is actively considering the use of it.

A preliminary appraisal indicates that the dialaphone will rent for about $6 a month.

Financial News and Comment

By OWEN ELY

Bell System's Rate Cases

It may be of interest to note the progress being made by the Bell telephone system with its various rate cases. As of mid-April, Bell subsidiaries had applications pending for some $130 million rate increases—equivalent to a little over 2 per cent of annual system revenues and equal (after income taxes) to about $1 a share on AT&T stock.

The most important case is, of course, the one in New York state where operations contribute about one-seventh of Bell system revenues. On November 23rd the New York Telephone Company asked the New York Public Service Commission for an increase in rates of $55.4 million per annum. The petition followed a decision by the court of appeals holding that the commission was wrong (in the earlier stage of the rate case) in not accepting evidence relating to the reproduction cost of properties as required by New York statutes. Governor Harriman then announced that he would press for enactment of a special state law directing the commission to use only original cost as the rate base, in line with present statutes governing regulation of electric and gas companies. However, the legislature refused to pass the proposed bills before adjournment.

In accordance with the court decision, the commission has now accepted the exhibits of the New York Telephone Company relating to reproduction costs and fair value. Hearings on the case were resumed April 8th, after they had been recessed in March. Progress of the case may be somewhat slow, but it would seem reasonable to expect a decision before the end of the year.

There can be little doubt that New York Telephone Company earnings have been "squeezed" by rigid regulation in New York state. Small rate increases were allowed in December, 1955, and July, 1956, largely to offset wage increases, but total rate increases since 1940 have been only about 20 per cent over all—the lowest in the Bell system and comparing with an average increase of 43 per cent in intra-

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state rates for the other Bell system companies. The company's rate of earnings on invested capital not only has been substantially less than for the twenty-five years preceding, but has been below the level of its earnings during the worst four years of the depression. The company has failed to earn its regular dividend during ten of the last sixteen years. For the year 1956 we estimate that net operating income of about $92 million was equivalent to only about 5¾ per cent on an average rate base (including a small allowance for working capital) of about $1.6 billion. On a fair value rate base the return would be substantially less.

Bell Telephone of Pennsylvania was granted $13.5 million of a requested $36 million annual rate increase in December. In Oregon Pacific Telephone & Telegraph last September asked for a $3.2 million increase and received $2.2 million in January, 1957.

SOUTHERN BELL TELEPHONE & TELEGRAPH has several rate proceedings in progress. On December 20th the company lost its request for a $4.5 million rate increase in Mississippi but is collecting $2.5 million under bond while appealing to the courts. In Louisiana, also, the state supreme court on February 25th upheld the order of the public service commission (see comment in this department, October 11, 1956, pages 611-15) directing the company to reduce its revenues by $3.9 million, despite the fact that the company had asked for increases totaling $8.8 million.

The court accepted the hypothetical 45 per cent debt ratio adopted by the commission and made a cursory recital of some other statistical data presented in the case.

In Tennessee the company fared better on appeal and the chancery court headed by Thomas W. Steele made a real effort (in a 35-page decision) to analyze the data. The court accepted more recent test period results, stating ". . . it is not only within the power, but, in fact, is the duty of the court to receive and consider evidence of the company's actual operating experiences under the rate order to test its constitutionality." The commission's rates were found to produce an adjusted rate of return of 4.01 per cent on net investment, compared with the 6.10 per cent specified in the order.

HOWEVER, the court held that this fact alone did not prove confiscation. Its approach was to examine the return actually being earned on the company's equity capital compared with the commission's 7.6 per cent finding. The later test period produced only 5.14 per cent on equity using the commission's adjustment for 45 per cent debt ratio or 3.58 per cent on an actual capital basis, which was found to be confiscatory "because it does not allow a sufficient return to the complainant to enable it to attract and obtain necessary additional capital which is needed . . ." The court did not determine the exact level of return on equity necessary to avoid confiscation.

The company last November asked the Kentucky commission for a $4.5 million increase, claiming that the rate of return on investment was only 4.75 per cent, and this case is still pending. The other Bell companies have asked for large increases recently in Massachusetts, Michigan, Nebraska, Minnesota, and Wisconsin. These and a number of smaller cases are still pending.

Analysts' Views on Accelerated Depreciation

THE Irving Trust Company recently issued its Public Utility Information

Bulletin No. 10, "Survey of How Financial Analysts Will Handle Accelerated Depreciation for Analytical Purposes." The study was prepared by Marilyn Walsh, assistant to John Childs, vice president and head of the utility department. After referring to the several optional methods provided in the Internal Revenue Code of 1954 for adopting accelerated depreciation in the statement of earnings used for computing federal income taxes, the bulletin describes the views of fifteen Wall Street utility analysts, regarding the numerous complications introduced into utility accounts by the reduction in income taxes (usually referred to as "deferred taxes") after one of the methods for using accelerated depreciation has been adopted.

Because the accounting problems involved are relatively new, and the various state commissions have not all issued accounting orders or defined their policies in rate proceedings, there is no uniformity in the accounting treatment of deferred taxes, nor even in reporting the method of treatment. The latter is of greatest interest to the analysts, who are constantly comparing the earnings figures of various utilities to appraise their securities. The bulletin states that all the analysts, with one slight exception, favored obtaining the following information (presumably in the utility company's interim and annual reports to stockholders, prospectuses, etc.):

1. The optional method or methods used.

2. The treatment of the tax reduction item in the income account and in the balance sheet.

3. Estimated future tax reduction by years on the basis of the present tax rate (two to five years being mentioned, with one analyst suggesting ten years).

4. The opinion of the rate regulatory authority on accelerated depreciation. (This was stressed as very important and should indicate whether the decision was for accounting only, or whether it also included rate making.)

5. The amount of the dividend payment which is a return of capital for tax purposes ("tax-free" portion of the dividend).

THE analysts also indicated the way they expected to interpret the company's accounting statements, where different methods of handling the deferred taxes (tax savings) are involved. With reference to the income account and share earnings, the analysts' views were tabulated by the Irving Trust study as follows:

If the company *normalizes* taxes and

CURRENT YIELD YARDSTICKS

	April 12, 1957	*1957 Range* High	Low	*1956 Range* High	Low	*1955 Range* High	Low	*1954 Range* High	Low
Utility Bonds—AAA	3.70%	3.84%	3.70%	3.83%	3.08%	3.19%	2.93%	3.13%	2.86%
Aa	3.79	3.88	3.78	3.87	3.11	3.26	2.99	3.19	2.92
A	4.01	4.06	3.92	3.92	3.27	3.36	3.12	3.37	3.11
Baa	4.23	4.28	4.23	4.23	3.49	3.51	3.37	3.72	3.37
Utility Pfd. Stocks—High-grade	4.48	4.64	4.37	4.68	3.92	3.98	3.89	4.09	3.85
—Medium-grade	4.78	4.79	4.76	4.84	4.25	4.32	4.19	4.51	4.17
24 Electric Utility Common Stocks	4.80	4.87	4.77	4.87	4.45	4.64	4.32	5.23	4.50
30 Gas Utility Common Stocks	4.48	4.67	4.48	4.83	4.30	4.70	4.29	5.22	4.64

Source of data, Moody's Service.

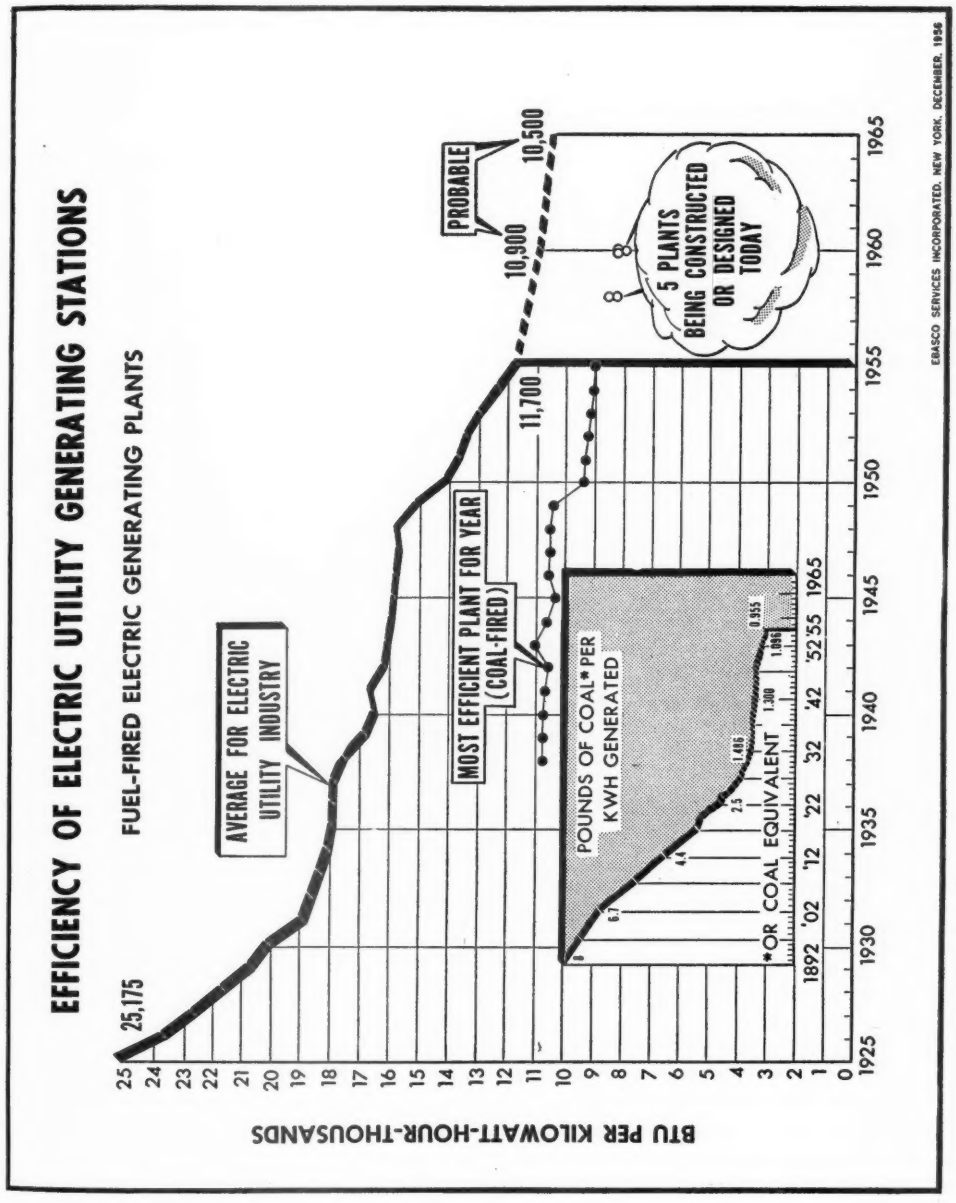
reports the additional income generated by the tax reduction either as restricted surplus or as a special reserve for deferred taxes, the analysts with few exceptions will exclude the additional income from earnings per share, the same as the utility does. If the company reports the additional income as depreciation expense, the analysts (with only one exception) will also exclude the additional income from share earnings. However, where the utility *does not normalize* taxes but lets the additional income flow through to share earnings, twelve of the fifteen analysts are almost evenly divided as to whether or not they will follow the company procedure and include this additional income in share earnings, or whether they will adjust share earnings downward so that in comparing price-earnings ratios of various utilities they will be on a uniform basis in this respect. Three analysts said they would consider the earnings both ways. It appears from the comments of some of the analysts, that their answers are dependent on how regulatory agencies will treat the matter for rate purposes. It is possible that Wall Street analytical treatment may be subject to some change as the situation with respect to both accounting and rate regulation becomes more definite.

THE next problem for the analyst is how to treat the balance sheet figures, in computing the equity ratio (in capitalization) and the book value of the common stock. Where the utility company normalizes deferred taxes and charges the amount of the tax reduction to a special *reserve* (for use in later years, as contemplated in the Revenue Act) almost all the analysts will exclude the amount from surplus, even though the cash may be invested in plant. But if the amount of the deferred taxes (normalized) is carried to *restricted surplus* the analysts are almost equally divided as to whether or not they will include this additional income as a part of surplus when they calculate book value and capital ratios. Three of the analysts who voted to include this additional income with surplus conditioned their answer on having the amount included in the rate base. However, if a company reports the additional income generated by the tax reduction as depreciation expense and hence it goes into the *reserve for depreciation,* all the analysts will exclude the amount from surplus.

If a company does not normalize taxes but lets the additional income flow through to net income and to earned surplus, the analysts are almost evenly divided as to whether or not they will include it with surplus when they calculate book value and the capital structure ratios.

Hidden Cost of Public Power

IRA U. COBLEIGH and Robert A. Gilbert have written an article on "The Hidden Cost of Public Power" in the *National Review* of March 15th. The article is devoted largely to a comparison of the estimated costs of power from the municipal electric plant being built by the city of Memphis and similar figures if a corresponding plant had been built by the Mississippi Valley Generating Company under the so-called Dixon-Yates plan. The new plant will, it is estimated, cost some $200 per kilowatt compared with $165 if built by private utilities. Kilowatt-hour rates for customers will start at 4.48 mills (and may have to be raised later) compared with the 3.98 mills which the private utilities had been willing to guarantee for twenty-five years (except for adjustments relating to fuel costs). Also the private plant would have paid regular federal and state taxes, while the plant


EFFICIENCY OF ELECTRIC UTILITY GENERATING STATIONS
FUEL-FIRED ELECTRIC GENERATING PLANTS
BTU PER KILOWATT-HOUR-THOUSANDS
AVERAGE FOR ELECTRIC UTILITY INDUSTRY
MOST EFFICIENT PLANT FOR YEAR (COAL-FIRED)
25,175
11,700
PROBABLE
10,900
10,500
5 PLANTS BEING CONSTRUCTED OR DESIGNED TODAY
POUNDS OF COAL* PER KWH GENERATED
*OR COAL EQUIVALENT
1892 '02 '12 '22 '32 '42 '52 '55 1965
1925 1930 1935 1940 1945 1950 1955 1960 1965
EBASCO SERVICES INCORPORATED, NEW YORK, DECEMBER, 1956

now being built will not—the tax exemption being in the nature of a subsidy.

The authors also point out other instances of inflated costs for public projects. The Clark Hill project in Georgia-South Carolina was originally estimated in 1939 to cost $28 million; by 1955, for about the same installed capacity, over

UTILITY ANALYSES PUBLISHED RECENTLY*

Company Analyses	*Firm*	*No. Pages*	*Issued*
California Electric Power	Walston & Co., Inc.	3	—
Carolina Power & Light	Josephthal & Co.	1	Apr.
Cascade Natural Gas	Blanchett, Hinton & Jones (Seattle)	3	Jan.?
Central & South West	Reynolds & Co.	1	Jan.
Central Illinois Light	Paine, Webber, Jackson & Curtis	1	Feb.
Citizens Utilities	Josephthal & Co.	2	Jan.
Columbus & So. Ohio Elec.	Argus Research Corporation	2	Mar.
Dayton Power & Light Co.	Argus Research Corporation	2	Feb.
El Paso Electric	Loewi & Co. (Milwaukee)	4	Mar.
Hawaiian Electric	Josephthal & Co.	2	Feb.
Houston Lighting & Power	White, Weld & Co.	6	Jan.
Illinois Power	Argus Research Corporation	2	Jan.
Kentucky Utilities	Josephthal & Co.	2	Apr.
Long Island Lighting	Argus Research Corporation	2	Dec.
Montana-Dakota Utilities	Argus Research Corporation	2	Dec.
National Fuel Gas	Josephthal & Co.	2	Mar.
Niagara Mohawk Power	Kerr & Co.	4	Feb.
Northern Illinois Gas Co.	A. G. Becker & Co.	1	Feb.
Ohio Edison	Argus Research Corporation	2	Jan.
Portland General Electric	Hill Richards & Co. (Los Angeles)	4	Feb.
Potomac Electric Power	Argus Research Corporation	2	Mar.
South. Calif. Edison	Josephthal & Co.	1	Jan.
Southern Indiana G. & E.	Argus Research Corporation	2	Feb.
Southwestern Pub. Serv.	Cohen, Simonson & Co.	1	Jan.
Texas Utilities	Josephthal & Co.	2	Feb.
Union Electric	A. M. Kidder & Co.	2	Feb.
Union Electric	Hornblower & Weeks	1	Mar.
Union Electric	Reynolds & Co.	1	Mar.
United Utilities, Inc.	Kerr & Co.	4	Dec.
Virginia Elec. & Power	Argus Research Corporation	2	Mar.
General Topics			
Public Utilities & Atomic Energy	Reynolds & Co.	1	Feb.
Beneficiaries of Growing Electrical Energy Consumption	Hemphill, Noyes & Co.	4	Feb.
Why Utility Average Made New Peak for Almost Twenty-six Years	Walston & Co., Inc.	1	Feb.
Water Companies—Why This Industry Has Special Appeal	Schirmer, Atherton & Co. (Boston)	4	Jan.
Regular Bulletins			
Monthly Review of Utility Development	Josephthal & Co.	4	Apr.
Public Utilities Bulletin	Eastman, Dillon, Union Securities & Co.	10	Apr.
Utilities' Dividend Meetings (Comment)	Merrill Lynch, Pierce, Fenner & Beane	3	Mar.
Lists and Tabulations			
24 Electric Utility Stocks Attractive for Stable Income and Long-term Growth	Harris, Upham & Co.	1	Mar.
Electric Utilities for Income and Growth	Thomson & McKinnon	4	Mar.
Utility Company Common Stocks (Comparative Regional Tabulation)	White, Weld & Co.	8	Mar.
Forty Good-grade Utility Stocks	W. E. Burnett & Co.	1	Feb.
Electrical & Gas Utility Stocks (Tabulation)	First Boston Corporation	11	Dec.

*Similar lists have appeared about three times a year in earlier issues, the last being in the December 20, 1956, issue.

$78 million had been spent. The Kerr project in Virginia was to have cost over $31 million in 1944; by 1955, the cost exceeded $87 million. The Garrison dam in North Dakota was estimated at $130 million in 1943; now the figure is $294 million.

Hungry Horse, in Montana, in 1951 was estimated at less than $40 million; by 1954 it had cost over $101 million. McNary dam in Washington-Oregon was to cost less than $50 million in 1938; by 1956 the cost was $286 million. The authors concluded:

> Prices of equipment change, of course, and sometimes more capacity is added during construction, but the socialist planners never seem to be able to estimate accurately in the first place, even on the visible costs. In addition, there are the invisible costs such as lost taxes. . . .

If the full costs of every such project were to be analyzed as the Memphis figures are analyzed above, if the *real* cost of socialized power were to be explained, our politicians might care to take another long, hard look at what they are planning to do with the taxpayers' money. And they might also begin to question whether the federal government should continue to grant individual income tax exemption on interest received from revenue bonds issued by states and municipalities for projects which needlessly compete with tax-paying private enterprise.

Reprints of the article are obtainable at 15 cents a copy or in quantity at the rate of $45 a thousand.

RECENT FINANCIAL DATA ON GAS UTILITY STOCKS

Annual Rev. (Mill.)			*4/16/57 Price About*	*Dividend Rate*	*Approx. Yield*	*Recent Share Earns.*	*% Increase*	*Aver. Incr. In Sh. Earns. 1951-56*	*Price-Earns. Ratio*	*Div. Payout*	*Approx. Common Stock Equity*
		Pipelines									
$ 4	O	Ala.-Tenn. Nat. Gas	20	$1.20	6.0%	$1.36De	1%	14%	14.7	89%	40%
16	O	Commonwealth N. G. ...	32	1.60	5.0	2.77De	6	X	11.6	58	39
16	O	E. Tenn. Nat. Gas	9	.60	6.7	.83De	30	X	10.8	72	19
48	S	Miss. River Fuel	35	1.60	4.6	2.17Se	16	6	16.1	74	52
80	S	Southern Nat. Gas	42	2.00	4.8	2.35De	D1	4	17.8	85	46
268	O	Tenn. Gas Trans.	35	1.40	4.0	1.93De	9	18	18.1	73	20
175	O	Texas East. Trans.	26	1.40	5.4	2.05De	2	3	12.7	68	24
71	O	Texas Gas Trans.	23	1.00	4.3	2.17De	25	4	10.6	46	27
88	O	Transcont. Gas P. L. ...	20	1.00	5.0	1.32De	15	19	15.2	76	19
		Averages			5.1%				14.2	71%	
		Integrated Companies									
158	S	American Nat. Gas	61	$2.60	4.3%	$4.34De	30%	13%	14.1	60%	35%
50	A	Arkansas-Louis. Gas ...	22	1.20j	5.5	1.50Oc	NC	10	14.7	80	53
47	O	Colo. Interstate Gas	79	1.25	1.7	5.09De	D3	36	15.9	25	35
343	S	Columbia Gas System ..	17	1.00	5.9	1.44De	33	7	11.8	70	43
8	O	Commonwealth Gas	8	.10	1.3	.26#	D51	D	—	38	72
12	S	Consol. Gas Util.	16	.90	5.6	1.39Ja	15	—	11.5	65	61
266	S	Consol. Nat. Gas	44	1.90	4.3	3.33De	16	4	13.2	57	67
186	S	El Paso Nat. Gas	37	1.30	3.5	2.11De	9	7	17.5	62	24
44	S	Equitable Gas	31	1.60	5.2	2.28De	12	4	13.6	70	36
17	O	Kansas-Nebr. Nat. Gas ..	37	1.65	4.5	2.44De	2	3	15.2	68	30
95	S	Lone Star Gas	34	1.80	5.3	2.19De	2	5	15.5	82	48
25	S	Montana-Dakota Util. ..	25	1.00	4.0	1.42De	D9	19	17.6	70	32
23	O	Mountain Fuel Supply ..	26	1.20	4.6	1.66De	10	9	15.7	72	57
81	S	National Fuel Gas	19	1.10	5.8	1.64De	5	8	11.6	67	62
113	S	Northern Nat. Gas	58	2.60	4.5	3.60De	13	7	16.1	72	37
43	S	Oklahoma Nat. Gas	28	1.50	5.4	2.09F	D5	6	13.4	72	29

113	S	Panhandle E. P. L.	54	1.80	3.3	2.75De	10	16	19.6	65	35
11	O	Pennsylvania Gas	24	1.20	5.0	1.63#	D10	D	14.7	74	68
166	S	Peoples G. L. & Coke ...	187	8.00	4.3	12.27De	8	7	15.2	65	42
34	O	Southern Union Gas	27	1.12	4.1	1.52De	D10	9	17.8	74	35
273	S	United Gas Corp.	34	1.50	4.4	2.28De	12	7	14.9	66	43
		Averages			4.4%				14.3	65%	
		Retail Distributors									
28	A	Alabama Gas	30	$1.60	5.3%	$2.36De	8%	31%	12.7	68%	42%
44	O	Atlantic Gas Light	31	1.60	5.2	2.67De	32	11	11.6	60	36
5	O	Berkshire Gas	16	.90	5.6	1.34Au	111	46	11.9	67	35
6	O	Bridgeport Gas	28	1.60	5.7	2.54De	17	48**	11.0	63	43
4	O	Brockton-Taunton Gas ..	17	.90	5.3	1.29De	32	60	13.2	70	40
59	S	Brooklyn Union Gas	35	2.00	5.7	2.83De	5	6	12.4	71	49
1	O	Cascade Nat. Gas	10	—	—	Def.De	—	—	—	—	13
33	O	Central El. & Gas	16	.90	5.6	1.67Se	28	9	9.6	54	17
12	O	Central Indiana Gas	14	.80	5.7	1.04De	25	4	13.5	77	65
5	O	Chattanooga Gas	5½	.30	5.5	.48N	40	14	11.5	63	45
64	O	Gas Service	24	1.36	5.7	1.92De	4	0	12.5	71	40
7	O	Hartford Gas	37	2.00	5.4	3.01De	39	5	12.3	66	48
2	O	Haverhill Gas	21	1.32	6.3	2.05F	37	2	10.2	64	58
31	O	Houston Nat. Gas	35	1.50	4.3	2.26Jy	24	6	15.5	66	22
17	O	Indiana G. & Water	20	1.00(k)	5.0	1.51F	D1	9	13.2	66	45
45	S	Laclede Gas	15	.80	5.3	1.09De	4	7	13.8	73	35
4	O	Michigan Gas Utils.	22	1.05	4.8	1.45De	10	14	15.2	72	38
4	O	Midsouth Gas	13	.60	4.6	.72#	71	D	18.1	83	34
42	O	Minneapolis Gas	26	1.40	5.4	1.99De	22	14	13.1	70	38
14	O	Miss. Valley Gas	19	1.12	5.9	1.92Se	14	—	9.9	58	28
4	O	Mobile Gas Service	22	1.00	4.5	1.17De	D13	D	18.8	85	33
7	O	New Haven Gas	29	1.70	5.9	2.26De	D6	10	12.8	75	66
12	O	New Jersey Nat. Gas ...	27	1.20(i)	4.4	2.23De	17	—	12.1	54	32
80	O	No. Illinois Gas	18	.88	4.9	1.32F	10	—	13.6	67	46
8	O	North Penn Gas	14	1.00	7.1	1.02De	23	7	13.7	98	56
6	O	North Shore Gas	16	.80	5.0	1.16De	23	6	13.8	69	54
183	S	Pacific Lighting	39	2.00	5.1	2.84De	5	33	13.7	70	44
19	O	Pioneer Nat. Gas	29	1.32	4.6	2.02De	15	17	14.4	65	39
13	O	Portland Gas & Coke ..	37	1.00	2.7	2.38De	6	8	15.5	42	36
2	O	Portland Gas Light	10	.75	7.5	.73De	D40	—	13.7	103	25
8	A	Providence Gas	9½	.56	5.9	.63De	6	15	15.1	89	60
3	A	Rio Grande Valley Gas ..	3	.15	5.0	.28De	7	9	10.7	54	58
3	O	So. Atlantic Gas	13	.80	6.1	.89#	12	D	14.6	90	35
11	O	South Jersey Gas	27	1.40	5.2	2.12De	25	28	12.7	66	55
26	S	United Gas Impr.	37	2.00	5.4	2.46De	14	1	15.0	81	64
48	S	Wash. Gas Light	38	2.00	5.3	3.04De	2	4	12.5	66	43
8	O	Wash. Nat. Gas	16	.10(l)	0.7	.34Se	D33	—	—	117	67
7	O	Western Ky. Gas	13	.60	4.6	.98De	D5	20	13.3	61	35
		Averages			5.2%				13.3	71%	

RECENT FINANCIAL DATA ON TELEPHONE, TRANSIT, AND WATER STOCKS

Annual Rev. (Mill.)			*4/16/57 Price About*	*Dividend Rate*	*Approx. Yield*	*Recent Share Earns.*	*% Increase*	*Aver. Incr. In Sh. Earns. 1951-56*	*Price-Earns. Ratio*	*Div. Payout*	*Approx. Common Stock Equity*
		Communications Companies									
		Bell System									
$5,825	S	Amer. T. & T. (Cons.) ..	178	$9.00	5.1%	$13.18*F	—	2	13.5	68%	67%
274	A	Bell Tel. of Canada	46	2.00	4.3	2.25De	D3%	2	20.4	89	64
43	O	Cin. & Sub. Bell Tel. ..	88	4.50	5.1	5.58De	2	4	15.5	81	100
209	A	Mountain Sts. T. & T. ..	126	6.60	5.2	9.01De	16	13	14.0	73	68
308	A	New England T. & T.	135	8.00	5.9	9.01De	—	4	15.0	89	60
792	S	Pacific T. & T.	128	7.00	5.5	8.79F	—	4	14.6	80	58
98	O	So. New Eng. Tel.	38	2.00	5.3	2.19De	13	3	17.4	91	59
		Averages			5.2%				15.8	82%	

		Independents									
5	O	Anglo-Canadian Tel. ...	36	$ .60	1.7%	$3.21De	20%	54	11.2	19%	44%
33	O	British Col. Tel.	45	2.00	4.4	3.32Se	6	22	13.6	60	28
2	O	Calif. Inter. Tel.	11	.70	6.4	.80De	D20	—	13.8	88	30
13	O	Calif. Water & Tel.	20	1.20	6.0	1.46#	20	11	13.7	82	42
14	O	Central Telephone	21	1.00m	4.8	2.15Se	13	14	9.3	47	25
3	O	Commonwealth Tel.	14½	.80	5.5	1.31#	27	26c	11.1	61	32
4	O	Florida Telephone	17	.90	5.3	.86De	D2	D	19.8	105	42
237	S	General Telephone	44	1.80	4.1	3.05De	17	32	14.4	59	37
15	O	Hawaiian Telephone	19	1.00	5.3	1.31F	D10	19	14.3	76	44
6	O	Inter-Mountain Tel.	14	.80	5.7	.80De	D16	2	17.5	100	62
22	S	Peninsular Tel.	44	2.00	4.5	2.15De	D10	2	20.5	93	46
21	O	Rochester Tel.	17	1.00	5.9	1.62De	6	6	10.5	62	39
3	O	Southeastern Tel.	16	.90	5.6	1.36Se	43	13	11.8	66	42
8	O	Southwestern St. Tel. ...	20	1.12	5.6	1.48Je	36	1	13.5	76	42
31	O	United Utilities	21	1.20	5.7	1.63De	D5	5	12.9	74	36
12	O	West Coast Tel.	18	1.00	5.6	1.24Se	2	25	14.5	81	43
252	S	Western Union Tel.	18	1.00	5.6	2.21De	5	15	8.1	45	86
		Averages			5.2%				13.7	70%	
		Transit Companies									
22	O	Baltimore Transit	11	—	—	$ .18De	D86%	X	—	—	40%
13	O	Cincinnati Transit	4½	$ .30	6.7%	.48De	41	10	9.4	63%	46
9	O	Dallas Transit	5	.35	7.0	.57#	D48	D	8.8	61	51
33	S	Fifth Ave. Coach Lines ..	27	2.50	9.3	3.47De	21	4	7.8	73	100
244	S	Greyhound Corp.	16	1.00	6.3	1.27De	8	—	12.6	79	52
23	O	Los Angeles Transit	17	1.40	8.2	1.23De	30	11	13.8	114	92
26	S	Nat. City Lines	24	2.00	8.3	2.45De	D10	11	9.8	82	94
13	O	Niagara Frontier Trans.	8	.60	7.5	1.47#	—	14	5.5	41	78
69	O	Phila. Transit	9	.60	6.7	1.67De	31	8	5.4	36	38
6	O	Rochester Transit	5	.40	8.0	.43#	D2	D	11.6	93	40
23	O	St. Louis P. S.	12	1.40	11.7	.69De	1	19	17.4	203	97
15	S	Twin City R. T.	17	1.80	10.6	1.21De	1	D	14.0	149	48
22	O	United Transit	5	.60	12.0	1.03#	94	36	4.9	58	48
		Averages			8.5%				9.3	88%	
		Water Companies									
		Holding Companies									
40	S	American Water Works .	10	$ .50	5.0%	$1.00Ja	2%	6	10.0	50%	16%
		Operating Companies									
5	O	Bridgeport Hydraulic ...	30	$1.60	5.3%	$2.10De	2%	4	14.3	76%	58%
13	O	Calif. Water Service	42	2.20	5.2	3.16F	17	3	13.3	70	32
4	O	Elizabethtown Water ...	37	1.60	4.3	3.28De	16	31	11.3	49	56
9	S	Hackensack Water	40	2.00	5.0	2.87De	D20	2	13.9	70	37
8	O	Indianapolis Water	18	1.00	5.6	1.42De	D12	17	12.7	70	34
5	O	Jamaica Water	34	2.00	5.9	2.91De	—	8	11.7	69	25
4	O	New Haven Water	57	3.00	5.3	2.88De	D13	—	19.8	104	58
2	O	Ohio Water Service	26	1.50	5.8	2.50De	14	7	10.1	58	36
8	O	Phila. & Sub. Water	29	.50(e)	1.7	2.74De	25	3	10.6	18	28
2	O	Plainfield Un. Water ...	66	3.00	4.5	5.47#	37	8	12.1	55	40
4	O	San Jose Water	46	2.80	6.1	3.59De	5	9	12.8	78	45
9	O	Scranton-Springbrook ...	17	.90	5.3	1.44Se	10	8	11.8	63	29
5	O	Southern Calif. Water ..	14	.80	5.7	1.15De	7	8	12.2	70	34
4	O	West Va. Water Service .	21	1.40	6.7	1.67De	19	—	12.6	84	17
		Averages			5.2%				12.8	78%	

A—American Stock Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. #—Year ended December, 1955. Ja—January; F—February; Ma—March; Ap—April; My—May; Je—June; Ju—July; Au—August; Se—September; Oc—October; N—November; De—December. (e)—Also paid 5 per cent stock dividend December 1, 1956. (i)—Paid 2 per cent stock dividend December 10, 1956. (j)—Paid 10 per cent stock dividend November 21, 1956. (k)—Paid 3 per cent stock dividend December 19, 1956. (l)—One share of Pacific Northwest Pipeline for 70 shares held. (m)—Paid 10 per cent stock dividend January 2, 1957. NC—Not comparable. NA—Not available. X—Deficit in 1951. *On average shares. **1951 was an abnormally bad year.

What Others Think

Study of AEC Licensing Procedures

SOME dissatisfaction with AEC procedures in licensing reactor facilities has been disclosed by a report recently published by the congressional Joint Committee on Atomic Energy. Although no specific legislation is recommended, the study conducted by the Joint Committee throws considerable light on the present thinking of committee members who are evidently looking to the day when AEC's regulatory functions will assume greater importance than they now have.

The report concerns itself with three facets of AEC activity: (1) the question of public hearings on applications to construct reactors; (2) the availability to the public of hazard reports on each proposed reactor; and (3) the need for sharper separation of the licensing function within the AEC and the possible creation of a regulatory agency entirely divorced from other AEC responsibilities.

In the words of the report, the policies and goals which would be advanced by requiring more public hearings, more public safety reports, and a sharper separation of the AEC licensing function, include the following:

> 1. Objectivity in the evaluation of reactor hazards removed from promotional considerations, contributing to the protection of the health and safety of the public;
>
> 2. Increased public confidence in the regulating agency because of more formalized and open proceedings, separation of prosecutor and judicial functions, and provision of a quasi-judicial body which is not the primary competitor of the new industry, thereby creating a regulatory framework within which the industry may grow as the need for government assistance diminishes; and
>
> 3. Increased emphasis upon safety in the new industry, to protect both the private and public investment in the program, and to take maximum precautions to prevent a serious reactor accident which would set the program back many years.

THE study admits, however, that other considerations must be taken into account in any discussion of new statutory requirements. These include the need for top-level co-ordination in the entire atomic energy program at the present time because of the interrelationship of the program being licensed with other AEC activities; the need for flexibility and administrative efficiency in the new field, in order to avoid unnecessary procedural delays and governmental red tape; and the desirability of avoiding unnecessary du-

plication of functions, or the imposition of added burdens upon the AEC and its staff by procedural and organizational changes which would demand additional scarce technical and administrative personnel.

With these often conflicting goals in mind, the report goes on to discuss its conclusions in the first area of inquiry; namely, the question of public hearings on applications to build reactor facilities. Since December 28, 1956, the AEC has followed the procedure of first issuing a notice of intent or notice of proposed action. A construction permit is then issued unless a proper request for public hearing is received within fifteen days. A memorandum describing the reactor and supplying information as to hazard analysis accompanies the notice of intent. Although the report acknowledges advantages in the use of this type of procedure, it notes that it involves more work for the commission staff and raises a question as to whether the 15-day period is sufficient. The report suggests that perhaps the regulations should be changed to require a 3-day period in which interested parties could have more time to consider the many technical questions presented before deciding to request a public hearing.

THE AEC's position on the desirability of requiring a public hearing before the grant or denial of a construction permit is that in uncontested cases a hearing would involve unnecessary delay and would unduly restrict flexibility in the establishing of administrative procedures beyond those already established by the Administrative Procedures Act. The report, however, states:

> It is precisely in the noncontroversial applications that the requirement of an automatic hearing would be least burdensome and would consume the least amount of time for the AEC and the applicant to prepare for and thereafter to conduct. . . .
>
> When it is further recognized that to date it has taken at least six months on the average for the applicant to prepare and the AEC to process a power reaction application, and two months on the average to prepare and process a research reactor application, the comparatively small amount of additional time required to conduct a public hearing in a noncontested case would not be likely to work a significant hardship on the applicant or on the AEC.

THE same point can be made with regard to the AEC's position on the inflexibility of required hearings, the report adds.

"The primary object of concern giving rise to the proposed requirement of a public hearing is the license application for a facility where the potentially affected groups and members of the public may be numerous but they are not aware of their interest because the private program is new and still in its early stages of growth," the report continues.

"One might consider drawing a line by statute, defining the categories of reactor facilities in terms of power, design, and purpose which would be subject to required hearings in each case, and those categories which would permit some discretion on the part of the AEC as to whether or not hearings should be held." Significantly, the report notes the recommendations of a group of lawyers familiar with atomic energy matters which met in September at the University of Michigan Law School Summer Institute. They recommended formal hearings on all applications for the licensing of facilities during the present developmental period. Such a

hearing, the group said, would protect at the earliest possible stage all affected legal interests and, in providing the public with information, would serve to foster and maintain the confidence of the general public and state and local authorities in the proposed project.

THE Joint Committee report expresses considerable doubt about present procedures followed by the AEC on hazard evaluation. There is a question in the committee's mind whether the evolving organization and procedure in this area of the AEC's responsibility provides adequate assurance that the public health and safety will be adequately protected in the conduct of the private program of private development. Two related questions discussed by the report are (1) the need for objective evaluation by outside experts, and (2) the need for publication of such reports. The report states:

> As long as the responsibility for reactor safety is shared by the AEC on the one hand, and industry on the other, one can conceive of several factors which could contribute to something less than maximum public protection. . . .
>
> On the part of the government, considerations of promoting new reactor designs by private industry might lead to government approval of a reactor design at a stage of development and at a location that it would not have chosen, for safety reasons, if the program had been under government direction. It is also conceivable that industry, in the competitive pursuit of commercial power, might unconsciously be led to reduce its safety precautions below the maximum, in an effort to reduce the cost of atomic power production. An additional factor that could contribute to less than total detachment on the issue of reactor safety is a possible by-product of the seemingly desirable close working co-operation between the AEC technical staff and the applicant, in the preparation of a hazard summary report. This co-operative process could result in an identification of the AEC staff with the hazard analysis of the applicant, which could interfere with its independent appraisal.

THE report discusses several possibilities to avoid these pitfalls. First, a separate division of reactor safety might be established within the AEC itself; secondly, a government agency, outside the AEC, might be authorized to pass on the safety of reactor design and location. The report suggests an arrangement similar to that which now exists in the field of aviation. There, the Civil Aeronautics Board is responsible for economic regulation of the airlines, in addition to the promulgation of safety regulations and the conduct of accident investigations. But the Civil Aeronautics Administration is responsible for the certification of airworthiness of individual aircraft designs.

Noting the opposition of the AEC to required publication of reports of the Advisory Committee on Reactor Safeguards (ACRS), the report states:

> . . . If there is value to the commission in having such an evaluation, there is equal value in having such evaluation available to others. If the government should undertake an indemnity program up to $500 million under the proposed indemnity bills, it, too, would possess an additional reason for obtaining all possible information and evaluation of safety of a licensed facility.

The report dismisses as untenable the commission's objection that publication of

ACRS reports would inhibit the AEC's source of advice. ". . . one would suppose," the report comments, "that the ACRS would not have written differently in substance if it had known its report would be published. Public or private, such an advisory report would not be binding on the AEC. It would merely become a part of the public rather than the private record, upon the basis of which the commission would reach its determination as to safety. In the event of a hearing, it could constitute a proper basis for cross-examination on the points in issue." The report suggests the possibility of establishing the ACRS as a special statutory committee by amendment to the Atomic Energy Act, defining its composition and functions and defining the occasions on which an application should be reviewed by the committee and a public report issued.

By far the most interesting part of the Joint Committee's report is that which deals with the advantages and disadvantages of separating AEC licensing functions from other functions of the commission. Although the report shows keen appreciation of the unique nature of the atomic energy industry, it is clear that much sentiment exists to speed the development of an organization of the type now employed in the regulation of private utilities. The study discusses three possibilities: (1) creation of a separate agency with full authority to regulate private atomic activity; (2) a sharper allocation of the regulatory responsibility to one or more separate units already established within the AEC; (3) an internal reorganization of the AEC to create a separate regulatory body within the agency.

The AEC has recorded its opposition with the Joint Committee to the proposal to set up an independent agency to regulate the private atomic energy industry. The commission takes the view that a division at this time of the responsibility for development of a national atomic energy program would be seriously hindered and delayed and result in waste and duplication of effort. The Joint Committee's report seems to go along with this view, but only for the present. "As a longer-range view is taken of atomic energy development," the report states, ". . . the strength of the arguments against a separate agency diminish, and tend at some point to be outweighed by the arguments favoring separation. When the day of commercial atomic power arrives, and the atomic industry can operate free from government assistance, one can see definite advantages in an agency established to regulate that industry which would be independent of the government's manufacturing, producing, and operational efforts in the atomic energy program."

The report indicates, however, that the time has come for something more than a mere divisional reorganization and concentration of the regulatory function in the Division of Civilian Application, which has been proposed. Such a change, says the report, while it would involve the least interference with the present co-ordinated developmental effort, and the least duplication of functions, red tape, and delay, would also least contribute to greater objectivity in the administration of the licensing program, and in assuring hazard evaluation and application decisions in a quasi-judicial atmosphere totally removed from conflicting considerations.

The report clearly favors the third approach at the present time: the creation of an independent or semi-independent regulatory agency within the AEC. It is believed that this approach would not cause as much interference with a co-

ordinated atomic program as would the separate-agency approach; but neither would it go so far toward obtaining objectivity and impartiality. Concludes the report: "The variations of this intermediate possibility perhaps suggest arrangements capable of transitional application which would not destroy the advantages and achievements of the present organization, and yet would constitute a first step toward the eventual desideratum of a separated regulatory agency."

Compromise TVA Revenue Bond Plan

THE introduction of a new bill last month to authorize the Tennessee Valley Authority to issue revenue bonds to finance generating capacity for future power needs may help to resolve differences which so far have threatened to forestall any action at all on this important issue. The bill, S 1855, sponsored by Senator Cooper (Republican, Kentucky), attempts to steer a middle course between a TVA-supported proposal and a plan backed by the Bureau of the Budget. A bill introduced on the same day as the Cooper Bill embodies most of TVA's ideas on bond financing. Its sponsors, all Democrats, are Senator Kerr (Oklahoma), and Senators Gore and Kefauver (Tennessee), Eastland and Stennis (Mississippi), and Hill and Sparkman (Alabama).

The remarks of Senator Cooper on introducing his bill sharply identify the issues which must be resolved. Cooper said his bill "endeavors to give the Tennessee Valley Authority the flexibility it requires in order to maintain an integrated power system and to grow with the demand of the region it serves. The bill endeavors further to continue the agency's responsibility for repayment of the federal investment in its power facilities, to provide a reasonable rate of interest on the portion of this investment that remains unpaid, and to make the TVA self-sufficient as a government corporation."

Cooper complained that TVA has too long been allowed to stand as a rallying point for both sides in the power controversy, and has too long been treated with emotion, rather than with the constructive scrutiny which must be accorded a project which has become so considerable and complex in scope and so vital to the region where it operates.

PRINCIPAL differences which have so far prevented the enactment of needed legislation on TVA financing center on the degree of Treasury control over borrowing by TVA, limitations, if any, on the amount TVA should be allowed to borrow, and limitations, if any, on territorial expansion of TVA's present service area. Cooper's bill would establish a limit of $750 million worth of bonds which could be issued, an amount estimated to be sufficient for the first five years of the self-financing program. After five years, TVA could request further authorization from Congress. "Any tighter limitation," said Cooper, "would severely inhibit the agency's capacity for planning, but the requirement for new authority at the end of approximately five years would give Congress the opportunity to examine the results of the program." The bill would also limit TVA's expansion to the territory that was being served on a regular basis as of this past February. It would limit the use of the proceeds of the bonds.

"There are many power distributors on the periphery of the TVA territory," said Cooper, "who would prefer that no geographical border be set, so that they might have the eventual alternative of buying

power from the TVA. Many of these distributors are in my own state, and while I am reluctant to propose legislation against their expressed desires, I believe that a limitation is necessary at this time in order to make it clear to Congress that the TVA is planning to expand its power operations only within a specified service area. The bill would allow for later additions to the territory if they were approved in separate legislation by Congress. Included in the service area, of course, would be all co-operatives and distributors who have exchange power arrangements."

On the question of Treasury control over TVA bond issues, Cooper's proposal would require TVA to consult with the Treasury Department before making a bond offering, and would give the Treasury the right to control the dates of issuance, recall, and maturity within a 90-day period. The Treasury could not, however, as suggested in the Budget Bureau's proposal, delay any issuance or date of bond maturity more than ninety days.

THE 40-year repayment provision, included in the 1948 Independent Agencies and Corporations Act, would not be disturbed under Cooper's proposal. His bill provides, however, that these repayments shall not retire the federal investment in the TVA below the level of $750 million. This figure would be subject to review by Congress either when the TVA makes its second request for bond-issuing authority or when the federal investment is reduced to the point of $750 million. The bill would require TVA to commence payment of interest on that portion of the federal investment which has not been repaid, at the rate of the average interest costs payable by the Treasury on its total marketable public obligations as of the beginning of each fiscal year. Major differences between Cooper's bill and Budget Bureau and TVA proposals are shown in the chart below.

TVA Bill	*Budget Bill*	*Cooper Bill*
Interest paid to Treasury on outstanding appropriation investment at average interest rate on Treasury's obligations each year.	Interest paid to Treasury on outstanding appropriation investment at average interest rate on Treasury's long-term obligations each year.	Interest paid to Treasury on outstanding appropriation investment at average interest rate on Treasury's obligations each year. (Same as TVA bill.)
No apportionment of bond issue proceeds by Bureau of the Budget.	Apportionment of bond issue proceeds by Bureau of the Budget.	No apportionment of bond issue proceeds by Bureau of the Budget. (Same as TVA bill.)
Treasury may buy TVA bonds.	Treasury may not buy TVA bonds.	Treasury may not buy TVA bonds. (Same as budget bill.)
TVA granted authority to perform engineering and construction work and other services.	TVA not granted authority to perform engineering and construction work and other services.	TVA not granted authority to perform engineering and construction work and other services. (Same as budget bill.)
TVA may sell bonds by negotiation.	TVA may not sell bonds by negotiation.	TVA may sell bonds by negotiation if Treasury approves.
Authorizes TVA to issue bonds without limitation and to use proceeds in any area embraced by original TVA Act.	Authorized TVA to issue bonds up to $750 million as specifically empowered each year by Congress, and to spend proceeds for purposes defined in annual congressional authorization.	Authorizes TVA to issue bonds up to $750 million and to use proceeds in area presently served by TVA, or outside present service area if Congress approves.
Details of bonds and time of issue not subject to Treasury control.	Details of bonds and time of issue subject to Treasury control.	Details of bonds subject of Treasury consultation; times of issue, recall, and maturity subject to Treasury control with Treasury not empowered to delay over ninety days.
No provision requiring repayment of appropriation investment.	TVA required to repay to extent of annual depreciation investment, stopping when appropriation investment paid down to $250 million.	TVA required to continue repayments established by 1948 Independent Agencies and Corporations Act, the 40-year plan, stopping when appropriation investment paid down to $750 million.

Congressional Record

Right-of-way Legal Manual

REGULATED utilities will be interested to learn of the forthcoming publication of a legal guide to state and federal law concerning highway utility relocation. The guide will be incorporated into a four-part legal service entitled *Just Compensation.* The information contained in the service has been compiled by a national authority on the subject, Henry J. Kaltenbach, a member of the bars of Missouri, New York, Virginia, and the District of Columbia. The author was formerly solicitor of the Bureau of Public Roads.

Just Compensation is designed to provide up-to-date information on the whole subject of compensation for the purchase of land for rights of way. Parts I and IV of the service, along with the chapter on utility relocation laws, are expected to be available before the end of the year. Utility companies should find the prospective guide to conflicting laws on relocation costs particularly valuable at a time when a stepped-up federal highway program is about to get off the ground and when state legislatures are either revising, reaffirming, or establishing new policies with respect to utility relocation costs. A tentative table of contents on this section of the service includes sections on the meaning of the term "law of the state," opinions of state attorneys general, statutory provisions on removal, the utilities and highways affected, statutory provisions on who pays the cost of removal, and court decisions pertaining thereto. The service is so designed that it may be kept up to date by supplements sent to subscribers as the occasion demands.

PART I of *Just Compensation* deals with the law where the entire tract is taken and will include just compensation, fair market value, enhancement in value because of improvement, the value to the owner, value to the condemner, time of the taking, highest and best use, moving costs, and business losses due to moving. Part IV concerns the law of evidence with respect to compensation, including expert testimony, basis of opinions, comparable sales, offers, assessed value, rentals, business profits, and reproduction cost. As noted above, these sections of the service will be made available within the next six months. Parts II and III of this service have been published. They concern, respectively, the law of compensation where only a part of the tract is taken, and compensation where no part of the tract is taken.

As the author notes, land acquisition for public purposes is big business today. It has been estimated that there will be a probable expenditure of $5 billion for rights of way on the 40,000-mile interstate system from funds authorized by Congress in June, 1956. "Not only have the enlarged programs for road construction increased the dollars that must be expended on rights of way," states the author in his preface, "but also the increased land values around urban areas have contributed to the higher costs. Design changes in highways, such as increased width and controlled access, have also played their part. Where right of way in a highway project used to be a minor element, it has now become one of major importance. In some urban projects, rights-of-way costs have amounted to more than 50 per cent of the entire cost of a project. The purchase of land for rights of way for the various telephone and telegraph, electric, oil, and gas companies is also an important item in the operation of these companies. The increase

in population; the housing developments in urban areas; the tremendous volume of traffic; the rapid material growth of the country; all are responsible for the increasing importance of land acquisition, both for public and quasi-public purposes."

The purpose of this service is primarily to provide a practical legal guide to those problems which relate to just compensation in land acquisition cases. The author has emphasized the practical and current, rather than the theoretical and historical. The service will be kept up to date and current through supplements which will be forwarded each month. It will deal with the facts of the cases to the extent possible so that the manner in which a particular jurisdiction applies the general principles to the particular facts will be readily understandable. It should provide the right-of-way agent and appraiser with a practical legal background and the lawyer with a useful time-saving tool.

JUST COMPENSATION, by Henry J. Kaltenbach, Right of Way and Legislative Consultants, Inc. Washington, D. C. 1956. Price, $50.

Notes on Recent Publications

THREE new contributions to the growing volume of literature on atomic energy have been attracting wide attention. They are James Stokeley's *The New World of the Atom; Atomic Energy for Your Business,* by Arnold Kramish and Eugene M. Zuckert; and *Atomic Energy and Congress,* by Morgan Thomas.

Stokeley's book is the most general of the three, taking the reader back to the beginnings of atomic research and unfolding the exciting story of the harnessing of the atom, its uses in war and peacetime, and present developments throughout the world. Stokeley is a specialist in making complicated scientific developments intelligible to the general public and from the layman's point of view his book is one of the best yet published on the subject of atomic energy. The author is a professor of journalism at Michigan State University where he teaches science writing.

Happily, laymen will find *Atomic Energy for Your Business* equally readable and provocative. The authors, Kramish and Zuckert, have aimed it particularly toward the businessman, with emphasis on the applications of atomic energy in all phases of industry.

The authors supply many concrete examples of the ways in which atomic energy is being used by specific companies, including public and private power organizations, and practical advice is offered to every businessman on how to obtain more specific and detailed information relating to his business. The Atomic Energy Act of 1954 is discussed as it relates to free enterprise. Present and potential markets are thoroughly appraised, and the authors take a long and realistic look at the future of atomic energy and all its ramifications.

Morgan Thomas' book deals with the delicate relationship between the Atomic Energy Commission and Congress, with particular reference to the nature of the policies adopted by the AEC and the Joint Congressional Committee on Atomic Energy between 1946 and 1955. The author's interest is, from the political scientist's point of view, the conflict between governmental agencies, on the one hand, which of necessity must maintain a certain amount of secrecy in their operations, and the concept of a democratic way of government which requires that the public be informed.

Thomas has spent the last four years directing group research on the public administration aspects of the atomic energy program.

THE NEW WORLD OF THE ATOM, by James Stokeley, Ives Washburn, Inc. New York, New York, 1957. Price, $5.50. 288 pp.

ATOMIC ENERGY FOR YOUR BUSINESS, by Arnold Kramish and Eugene M. Zuckert, David McKay Company, Inc. New York, New York, 1956. Price, $3.95. 269 pp.

ATOMIC ENERGY AND CONGRESS, by Morgan Thomas, The University of Michigan Press, Ann Arbor, Michigan. Price, $4.75. 301 pp.

The March of Events

Relocation Laws Approved

THE box score on state legislation permitting public utilities to be reimbursed for the expense of relocation of facilities due to highway construction as of the middle of last month total eight, with two other bills approved but still awaiting signature of the state governors. Two have been vetoed. Ten were still pending.

The eight new laws approved by the governors were passed in Georgia (government-owned utilities only), Idaho, Montana, New Mexico, North Dakota, Oklahoma, Tennessee, and Utah. These were in addition to the bill passed in Massachusetts last fall.

The bills passed by the state legislatures but awaiting the governors' signatures were in Colorado and New York. Bills passed but vetoed were in Kansas and Wyoming. Bills which have passed one house or which otherwise still had a fair chance of final action were pending in Delaware, Florida (session started late), Iowa, Maine, Missouri, Ohio, Pennsylvania, Rhode Island, Texas, and Vermont.

Third Right-of-way National Seminar

THE third national right-of-way conference-seminar of the American Right of Way Association will be held at the Conrad Hilton hotel, Chicago, Illinois, May 16th and 17th. This is the third national seminar held in conjunction with the meeting of the national board of directors and will present the professional approach to right-of-way and land acquisition and the impact of the Federal Highway Act of 1956.

There will be outstanding speakers on all phases of right of way, including experts with the answers to pipeline, high-tension steel tower transmission line, highway, railroad, and other public and quasi-public right-of-way problems.

California

State Launches Gas Study

THE state public utilities commission announced last month that it had launched its own study of "present and potential adequacy of gas supplies and service" in California.

The study will follow a pattern of questionings at public hearings of spokesmen for Southern California Gas Company, Southern Counties Gas Company, Pacific Lighting & Gas Supply Company, all fuel utilities in southern California,

and Pacific Gas and Electric Company, operating in northern California.

Initial hearings were scheduled to start in Los Angeles May 1st before Commissioner Matthew J. Dooley and Examiner Grant Syphers.

The inquiry will also cover rate structures as these apply to industry, to steam-generating fuels, and other classes of consumers. Specifically, the investigation will glean evidence on companies' ability to meet increasing demands, estimates of supply for the next ten years, practices in regard to priority of service among various categories of customers, and steps being taken or contemplated to augment future supplies of gas.

Utility Tax Law Suspension Urged

AN advisory committee last month called for an additional three-year suspension of a 1949 law that would empower the State Board of Equalization to lower utility company property assessments.

The committee, composed of representatives of organizations and interests concerned with the problem, also asked for a $1 million study by private consultants into whether the state is assessing utilities at rates higher than local assessors are applying to other types of property.

The staff of the state board contends that it assesses at 50 per cent of fair market value.

Iowa

Governor Vetoes Tax Aid for Bus Lines

GOVERNOR Herschel Loveless, a Democrat, recently vetoed a bill which would have granted tax exemptions to city bus companies.

The bill would have exempted the 16 transit companies in the state from paying the motor vehicle fuel tax and the state compensation tax on vehicles. The intent of the Republican-controlled legislature was to assist the hard-pressed transit companies.

The governor in his veto message said that three of the companies were making a profit. He said the bill would provide a windfall to these companies while failing to provide adequate financial relief to other transit firms in financial difficulty. He also said he was opposed to the bill because it would disrupt the tax structure and that exemptions should not be granted to any one group.

Kansas

Gas Rate Increase Proposed

AN application filed with the state corporation commission on April 16th by the Gas Service Company sought permission for rate increases totaling $4,050,000 annually.

The company, which is the largest gas distributor in Kansas, said this would average about $13.80 annually or $1.15 monthly to the "average domestic heating customer" in the state.

The utility also proposed to increase its rates to industrial and commercial users by 2 cents per thousand cubic feet.

Commission Chairman Marion Beatty said there was a "possibility of consolidating this case with the investigation started by the old commission." Initial hearings on a general investigation of Gas Service rates had previously been set for June 3rd and 4th. The commission during former Governor Hall's administration started the general investigation of the company's rates.

B. C. Adams, chairman of the board of directors of the company, said the proposed rate increases would provide $1,845,000 annual net income to the company after payment of federal, state, and local taxes. He explained that the company has never sought a general rate increase in the state of Kansas, and that the only adjustments in the company's rates have resulted from changes in the rates of its wholesale supplier, Cities Service Gas Company. Such adjustments have not resulted in any financial benefit or gain to the company, he said.

New Hampshire

Phone Rate Hike Suspended

NEW HAMPSHIRE'S public utilities commission last month suspended the effective date of a $1,464,000 increase in telephone rates being sought by the New England Telephone & Telegraph Company.

Meanwhile, Governor Dwinell asked the state legislature to appropriate $50,000 to hire special counsel to investigate the requested hike in rates.

In another related development, Deputy State Attorney General Warren E. Waters said he planned to check the utility's accounting procedures to determine if there are any federal income tax savings that could be passed on to customers.

The company had proposed that the new rates be put into effect June 1st, but the commission suspended the date pending the outcome of public hearings.

Electric Rates Boosted

PERMISSION to increase its electric rates by $165,000 a year, effective immediately, was granted to the Public Service Company of New Hampshire last month by the state public utilities commission. The utility, which is New Hampshire's largest producer of power, had asked for $600,000.

The amount was reduced, however, after the accounting treatment of accelerated depreciation of the firm's new facilities was changed.

Commission Chairman Harold K. Davison declared the case "is an important one" which may also have "future benefits for other utility ratepayers."

"Most states, under present accounting practices," Davison said, "place the tax savings which arise from accelerated depreciation into a reserve account."

Washington

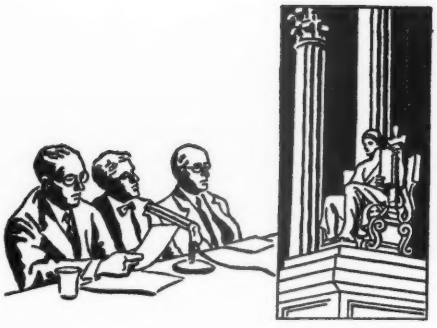
Gas Sales, Use Tax Upheld

LAST month the Thurston county superior court ruled that the Pacific Northwest Pipeline Corporation must pay state sales and use tax on construction of its natural gas pipeline in the state. In a memorandum opinion, Judge Raymond W. Clifford said the firm was not exempt from the taxes under state law, as contended by the utility's attorneys. Nor, Judge Clifford said, does application of the taxes to pipeline construction violate the interstate commerce clause of the federal Constitution.

The taxes are at the rate of 3½ per cent.

The attorney for the state tax commission said the state stands to gain about $1.5 million from the company as a result of the decision, although only about $1,000 was actually involved in the court action.

He said company attorneys claim the firm spent some $50 million piping natural gas throughout the state.



Progress of Regulation

Trends and Topics

Impact of Rapid Depreciation on Depreciation and Tax Deductions for Rate Making

RECENT decisions by a Pennsylvania court (17 PUR3d 249) and the Maine commission deal with rapid depreciation as a factor in rate making. The Maine case, Re Central Maine Power Co. FC No. 1498, March 15, 1957, is reviewed generally in this issue of the FORTNIGHTLY at page 708. Commissions in Arkansas, Massachusetts, and North Carolina have recently prescribed methods of accounting for accelerated depreciation (decisions reviewed in this issue of the FORTNIGHTLY at page 707). Expressions of opinion in these cases supplement the discussion in this department in the issue of PUBLIC UTILITIES FORTNIGHTLY, December 8, 1955, page 977, relating principally to accounting procedure.

Whatever depreciation method may be allowed for tax purposes and whatever method may be prescribed by commissions for accounting purposes, there remains the question of proper treatment of deductions in rate cases. Should the depreciation allowance taken for tax purposes also be used as the deduction in a rate case? If a different figure is used for rate making, what about the related income tax deduction?

Those are the underlying questions arising in rate proceedings. Actual payments for taxes as against "normalized" tax deductions are discussed in these cases. The Federal Power Commission, stating that it has consistently held that the allowance for taxes should not exceed taxes paid, ruled that the depreciation rate used in determining the income tax allowance was just and reasonable, although the company had used a lower depreciation rate in computing income tax allowance as part of the cost of service (15 PUR3d 289).

Decision by Maine Commission

The Maine commission in the Central Maine Power case (cited *supra*) rejected a contention by the company that it should be permitted to add an

additional amount which would not actually be paid for federal income taxes. This was the amount of its tax savings from accelerated depreciation. The question was whether the commission should use a test of "actual taxes" paid or "normalized taxes." Actual taxes would result in lower expenses and thus would aid the consumer. Normalized taxes would result in higher expenses and would allow the company to collect from consumers a hypothetical tax which it does not now, and may never, pay and to use the funds for the company's own purposes. Not much weight could be given to accounting rulings. The commission said that if it permitted the company to normalize its taxes, it would thereby be permitted to collect funds from consumers for capital purposes.

Explanation by Pennsylvania Court

The Pennsylvania superior court recently ruled for the "actual tax" doctrine in an unanimous decision of seven judges (17 PUR3d 249). The commission had rejected the utility's proposed "normalization," and had computed the allowance for taxes on the basis of the actual tax. The utility claimed error for two principal reasons: (1) Congress had intended as a matter of law that cash tax benefits be retained by the utility for expansion, modernization, and working capital to finance development; and (2) the commission's action would result in unjust discrimination in favor of present customers whose rates would be lower because of the lower tax in the early years of the property life, and against future customers whose rates would be computed in the later years when the depreciation deduction was lower and the tax higher.

The 1954 Code, answered the court, not only gives the taxpayer an option as to the depreciation method, but in § 167(e) there is the additional privilege to elect to change from an accelerated method to the straight-line method at any time. Under such circumstances, it could not be said that Congress intended to make accelerated depreciation a compulsory means for financing plant expansion and modernization. There is nothing in the 1954 Code or in the congressional reports which would require any taxpayer to use the funds saved for expansion or modernization.

With regard to the discrimination contention, the court pointed out that the effect of accelerated depreciation upon future taxes could not be determined at the present time. Future taxes would be determined not only by the depreciation allowance but by the utility's operating expenses, gross income, and the tax rate, not presently predictable. Moreover, the depreciation allowance for tax purposes would also depend upon the amount of new property which the utility constructed or acquired in future years, a matter solely within the realm of conjecture.

The fundamental defect in the utility's position, said the court, was that it ignored the fact that a utility is allowed to pass on to customers only proper expenses and allowances plus a legitimate profit or return to the utility. A bonus or gratuity based upon hypothetical considerations in addition to this is improper and not permissible.

Other Views on Rate Case Deductions

A federal court decided that a natural gas company which had received certificates permitting accelerated amortization of defense facilities might properly be allowed to include in cost of service the amount of federal income taxes computed on the basis of the depreciation deduction related to the service life of facilities being depreciated, instead of the lower amount paid currently and reflecting temporary savings by reason of accelerated amortization (11 PUR3d 113). Accruals for taxes in excess of those actually paid had not been treated as free and unrestricted income but had been earmarked to provide for the future meeting of such liability.

The New Mexico commission declared that the amount of deferred federal income tax set aside as surplus is for income tax purposes only and that amount is not to be allowed as a deduction for rate purposes (10 PUR3d 279). The deduction for depreciation, said the commission, is that which would be allowable in the absence of such tax treatment.

Federal income tax deferrals resulting from accelerated depreciation, according to the Indiana commission, should be allowed as a charge against net operating income, for rate determination purposes, since disallowance of the item would be opposed to the stated policy of Congress to stimulate industry by providing such interest-free funds (12 PUR3d 509).

Review of Current Cases

Accounting for Accelerated Depreciation

THREE more commissions have prescribed methods for accounting for accelerated depreciation under § 167 of the Internal Revenue Code and for accelerated amortization of defense facilities under § 168. They approved the use of an account "Reserved for Deferred Federal Income Taxes." The Arkansas commission ruled on accelerated depreciation only.

The North Carolina commission, ruling on accelerated amortization, noted that its effect is not to create additional income for the company but simply to defer federal income taxes. The total tax reduction allowed, it was observed, is the same whether taken in sixty months or spaced over a longer period, provided the tax rate remains constant.

Passing on both accelerated depreciation and amortization, the Massachusetts commission said the accounting procedure in each case should be similar, even though different basic objectives were contemplated in § 167, permitting accelerated depreciation at the election of the company, and in § 168, providing for 5-year amortization of emergency facilities. The eventual result under these sections would be to reduce income taxes during the early part of the life of the property and to increase them by the same amount during the latter part of such life, barring a change in tax rates. Whether a company should adopt accelerated depreciation or amortization is a matter for the determination of management, the commission indicated. *Re Nantahala Power & Light Co. Docket E-13, Sub 8, March 20, 1957;*

Re General Teleph. Co. of the Southwest, Docket No. U-1101, September 17, 1956; *Re Berkshire Gas Co. DPU 11975, December 31, 1956.*

Hearing Held Mandatory in Hydroelectric License Case

FOR want of a hearing, a federal district court set aside in part a Federal Power Commission order granting a license to construct a hydroelectric project on the Rocky Reach site on the Columbia river. The cause was remanded for a new hearing on the substantive issues raised by the protestant.

Shortly after Chelan county, Washington, filed an application for the license, the neighboring county of Douglas petitioned to intervene, protesting the application on certain substantive grounds, including the allocation of power to Chelan. Douglas held a preliminary permit to construct a hydroelectric project 40 miles upstream.

The order granting the license was issued without affording Douglas an opportunity for hearing.

The commission maintained that Douglas had waived its right to hearing by reason of a written statement which it and Chelan jointly presented to the commission expressing a common hope that prompt commission action might be had and indicating an intent to abide by the commission's decision. Not until rehearing was denied was it made apparent that the document was regarded as a waiver.

Lack of Hearing Jurisdictional

The court ruled that the joint statement was not a waiver of the right to a hearing. The crucial point in this case, said the court, is that Douglas protested the issuance of the license. It was entitled to a hearing when it filed that protest. Although, upon petition for rehearing, it did not complain of the failure of hearing, it did raise substantive issues and became entitled to judicial review of those issues. But since the commission held no hearing and made no record, there could be no judicial review.

The failure of the commission to hold a hearing was such a complete departure from the mandatory requirements of the Administrative Procedure Act that it deprived the commission of power or jurisdiction, the court declared. ". . . the provision for hearing in all such cases as this has been written into the Administrative Procedure Act in most explicit terms, and the result is that those terms are as definitive of the commission's powers as if they had been written into the Power Act itself." *Public Utility District No. 1 of Douglas County, State of Washington v. Federal Power Commission, No. 15,347, February 28, 1957.*

Sales Promotion to Stimulate Existing Demand Criticized

THE Maine commission, in denying an electric company's requested rate increase, took exception to the company's claim of justification for sales promotion expenses and reduced the claimed amounts so that the major portion would fall on stockholders' shoulders instead of consumers. The company had spent for the year 1956 the sum of $297,649 for sales promotion, claimed in its entirety as an

operating expense. The money had been used principally for institutional advertising, displays, publicity, and home, farm, commercial, and industrial promotion programs.

The company argued that the expense was necessary to create a demand for electric power. Not only was such advertising necessary and proper, it was contended, but the expense should be borne by the rate-paying public and not by stockholders. On the other hand, the company's president had stated that the demand for electric power was so great that the utility could hardly keep abreast. New plants, new financing, and, accordingly, the requested rate increase, were largely the result of trying to accommodate an ever-growing demand.

Since that was so, answered the commission, the necessity for stimulating a demand already realized with such a large expenditure of funds was questionable. The company was not in the same position as the average business with competitors on all sides. The company had a monopoly on the sale of electrical energy in its territory. It had no competition from other power sellers, only a fractional amount from bottled gas dealers, and practically none from the sellers of manufactured gas.

Another electric company in the state, closest to the applicant in size and similarity, was spending only one-third as much for sales promotion per kilowatt-hour sold, yet was experiencing approximately the same growth.

The commission reiterated previous rulings that large expenses for advertising should not be charged wholly to consumers. A gross amount of $166,700 was excluded for rate purposes. The commission made it clear that it did not mean to infer in any way that management could not continue to carry on a promotion program, as long as the cost fell on the shoulders of the stockholders, who would be the ones to benefit from the effectiveness of the program.

The commission also dealt with the question of deductions resulting from rapid depreciation for tax purposes (reviewed under Trends and Topics, ante, p. 705). *Re Central Maine Power Co. FC No. 1498, March 15, 1957.*

Pipeline Company Denied Intervention in Gas Producer's Certificate Case

THE United States court of appeals has upheld the Federal Power Commission in denying petitions by Panhandle Eastern Pipe Line Company and Memphis Light, Gas & Water Division to intervene in proceedings authorizing independent natural gas producers to supply American Louisiana Pipe Line Company part of its requirements for natural gas to be delivered from Louisiana to Michigan. The balance of the natural gas requirements for American Louisiana was to be supplied by Texas Gas Transmission Corporation.

Panhandle claimed that the commission abused its discretion in denying intervention in the producer proceedings in view of the fact that it had been allowed to intervene in proceedings relating to American Louisiana's application for a certificate. It also claimed that the commission erred in rejecting its motion to consolidate the producer proceedings with the earlier pipeline proceedings. The court disagreed,

saying that even where consolidation is sought at the instance of a proper party, it has refused to interfere with the control by an agency over its own proceedings.

The court said that whatever interest Panhandle had in the American Louisiana pipeline proceedings had been conclusively disposed of both by the commission and by the courts. Although a party, Panhandle had been found not to be aggrieved by the American Louisiana pipeline project. Consequently, in the court's opinion, it had no present interest to be heard as to where American Louisiana obtained its gas.

Intervention by Memphis

Memphis, in its petition for leave to intervene, told the commission it was engaged in distribution and sale of natural gas in Memphis and nearby areas. As a city gate customer of Texas Gas Transmission Corporation, it obtains all its gas under a requirements contract. It claimed that the producers plan to sell gas from various fields in Louisiana not to Texas Gas but to American Louisiana under contracts containing various price adjustment provisions and "favored nation" clauses. There was no claim that Texas Gas had any contractual relationship with any of these producers, that Memphis was a customer of any of them, or that it had any interest in the delivery and sale of gas to Michigan.

The court could not see how prices paid by American Louisiana to its suppliers, which were not alleged to have any relationship with Texas Gas, would adversely affect prices to be paid by Texas Gas to its suppliers, or how the prices paid by Texas Gas would adversely affect Memphis. There was no allegation that the commission had approved or would approve the price adjustment or "favored nation" clauses, or that the prices were unreasonable.

There was no allegation of direct and immediate injury to Memphis.

The court concluded that Memphis and Panhandle lacked standing to appeal as parties aggrieved by the commission's orders, since they had failed to allege facts upon which they could demonstrate aggrievement or that they were adversely affected by the orders, resulting in direct and immediate injury. *Memphis Light, Gas & Water Division v. Federal Power Commission, Nos. 12837, 12840, February 14, 1957.*

FPC Issues Certificate for Gas Pipeline From Field to Lateral

THE Federal Power Commission granted Transcontinental Gas Pipe Line Corporation a certificate under § 7 of the Natural Gas Act, authorizing the construction and operation of a half-mile pipeline from the Live Oak field in Louisiana to the company's Cow Island lateral. The new pipeline will be used to receive gas produced by the Superior Oil Company at Live Oak field. A certificate was issued to Superior authorizing sales to Transcontinental.

The commission found that Transcontinental was a "natural gas company" within the meaning of the Natural Gas Act, as previously determined in 1950 (84 PUR NS 467). It also found that the facilities were to be used in the transmission and sale of natural gas in interstate commerce for resale, subject to the commission's

jurisdiction, as integral parts of the company's existing pipeline system. The construction and operation of the facilities were therefore subject to the certificate requirements of § 7 (c) and (e) of the act.

Upon commencement of the sales to Transcontinental, the commission held, Superior will be engaged in the sale of natural gas in interstate commerce for resale, subject to the commission's jurisdiction. It will then be a "natural gas company" under the act.

Certificate for Facilities Questioned

Commissioner Digby, while concurring in the order granting a certificate to sell gas, asserted that a certificate is neither required nor properly issued for construction and operation of facilities of a producer or gatherer of natural gas. Citing decisions of the Supreme Court, the commissioner asserted that producing properties and gathering facilities of a natural gas company are exempt under § 1 (b) from the provisions of the Natural Gas Act. The commission recognized the absence of power over facilities, it was said, when it omitted in Order No. 174 and Order No. 174-A to provide any procedure whereby application could be made for a certificate authorizing their construction and operation. Commissioner Digby observed:

"The issue to be resolved is whether the Natural Gas Act requires that a certificate of public convenience and necessity issue for construction and operation of the facilities necessary to effect a sale by a producer or gatherer in interstate commerce for resale. The issue is not whether a sale of gas in interstate commerce for resale can be made without facilities. It cannot be doubted that facilities necessary to effect a sale of natural gas in interstate commerce are facilities used in interstate commerce. Recognition of this fact cannot, however, create power in this commission to issue, much less to require, certificates authorizing construction and operation of such facilities." *Re Superior Oil Co. et al. Docket Nos. G-9803, G-9804, March 4, 1957.*

Option Price Used in Rate Base Determination

THE Montana commission approved a newly formed gas company's application for a rate increase, as modified. The rates would permit the company to earn a return approximating 5.83 per cent, which the commission did not consider to be in excess of a reasonable return. Since the actual operating experience of the company at the time of hearing extended over a period of only a few months, the commission made it clear that the proposed rates should be placed into effect on a trial basis for at least one year subject to revision as later experience dictated.

Although fair value was the guiding criterion, it was clear to the commission that it could exercise a considerable amount of latitude in arriving at and determining that value. Just as the reasonableness of any order must depend upon the facts in each case, pointed out the commission, so should the method used in determining value bear some relation to the facts present and available in the particular case.

The most significant and reliable figure available to the commission was the option price for the property of the corporation's predecessor. The seller had been willing but was not forced to sell, said the

commission, and the purchaser was ready and willing to buy the property but under no compulsion to do so either by reason of competitive conditions or otherwise. The option price was contracted less than a year prior to the time of hearing and no evidence had been introduced which indicated any additions to the plant or equipment subsequent to that time.

The option figure was used by the commission as the value of tangible property used in the production and distribution of gas to the public. An amount was allowed as a portion of the rate base representing valuable contracts, promotion, and organization expense. In addition, an allowance was made for working capital and materials and supplies.

Excluded from the rate base was an amount claimed by the company for dehydration equipment and additions to production property, and estimated cathodic protection facilities and extensions to be added to the distribution property. Although the installation of such facilities was "definitely arranged for completion" and was not something "speculative," in the words of a witness, as yet the facilities were not a part of the property actually used and useful for the convenience of the public. *Re Cut Bank Gas Co. Docket No. 4494, Order No. 2641, March 14, 1957.*

Telephone Mobile Service Rates Made Reasonably Self-supporting

THE Illinois commission approved a telephone company's application for an increase in mobile telephone service rates. The record showed that present rates were too low and that the proposed increases were fully justified by the level of costs anticipated for the immediate future. Mobile service, pointed out the commission, like others involving specific groups of customers where costs have become excessive in relation to revenues, should be reasonably self-supporting.

The company had interviewed almost all the users of the service, and had stated that a large majority of the subscribers understood the need for higher rates or were neutral. The present rates had been established in 1946 and did not cover the present cost of furnishing the service. No change had been proposed in the charges for messages. The increased rates involved installation of two-way units, signaling units, and monthly equipment charges on cars, trucks, and boats, as well as increases in rates for dispatching terminals, for restoring service after denial for nonpayment, and for extensions.

Nature of Service

The commission explained the three forms of service involved in the case. All depended on the use of radio facilities, part of which were carried in moving vehicles or boats, with fixed stations located at points selected by the telephone company. General service contemplated two-way conversation between a mobile unit and another telephone, whether fixed or mobile. Approximately 1,100 vehicles had been equipped for this service. Dispatching service contemplated two-way conversation between a mobile unit and the same customer's dispatching terminal, which was a wire telephone permanently connected to the board which switched all mobile calls. About 250 vehicles were equipped for this service. Signaling service permitted any wire tele-

phone to send a signal to a mobile unit but did not permit any conversation to or from that unit. Few vehicles had this service.

Most of the users were delivering goods, performing construction and maintenance, or operating boats. The service differed from the private mobile service also furnished by the company in that it used connections with the general telephone network. By the use of message toll tariffs, mobile customers having general or dispatching service could call to or be called from anywhere in the country.

The evidence showed that this service had proved to be a valuable one to subscribers, and a very useful adjunct to the company's telephone network. Unfortunately, radio frequencies were not yet available in sufficient numbers to fill the public's requirements and demand for this service. In the Chicago area it appeared that there would be about 800 unfilled applications even after the addition of the two new channels planned for 1957. *Re Illinois Bell Teleph. Co. No. 43971, March 19, 1957.*

Telephone Rate Increase Denied Because of Substandard Service

ALTHOUGH Western Light & Telephone Company earned only 4.05 per cent on an average net investment rate base, the Oklahoma commission denied it a rate increase on the ground that the quality of service being rendered did not warrant a higher rate of return. The 4.05 per cent was more than enough to cover all expenses, interest on indebtedness, and dividends on preferred stock.

The quality of service is an important consideration in the determination of a fair rate of return, the commission declared, and a telephone company which fails to maintain its plant in a high state of efficiency and make additions necessary to keep pace with the modern standard of service cannot expect a rate of return equal to that allowed for service of a high quality.

The last two rate increases obtained by the company were granted subject to the condition that plant improvements be made. Noting that not a single exchange had been converted to dial operation since that time, the commission said the company had failed to keep pace in developing and modernizing its Oklahoma telephone properties.

The company should bear in mind, it was said, that the obligation is upon the owner of a public utility to provide the plant and make the necessary investments to furnish service. It is not the obligation of subscribers to pay rates which will enable the owner to build a plant wherewith to demand further increases.

Year-end Rate Base Rejected

The commission rejected a proposed rate base which represented "the actual or year-end rate base at December 31, 1955, plus the estimated rate base at December 31, 1956, divided by two." It appeared uncertain what net additions to utility plant would be a year hence. Moreover, even assuming that the estimate of net additions was made with the greatest accuracy, the effect of this new plant was not shown in the operating accounts. To try to relate "an estimated plant value twelve months in the future to operating revenue and expenses for the past twelve months does not, in our opinion," said the

commission, "appear to be congruous."

When a company is growing and making substantial additions to plant, the year-end rate base is appropriate, the commission indicated. But an average rate base should be used for a utility, such as the instant telephone company, which makes only nominal net additions from year to year.

The company's year-end account for materials and supplies was larger for 1954 and 1953 than for the test year. It sought an allowance for this item in excess of the test-year requirement. The commission thought, however, that to add to the net plant value a sum for materials and supplies contrary to the company's actual experience would result in an unfair advantage to the company.

The actual account at the end of the test year was allowed.

Expenses and Taxes

The commission refused to accept the company's claim for operating expenses "because it attempts to go into the realm of incomplete speculation." The claim anticipated additional depreciation due to possible increase in plant, together with an increase in general and administrative expense because it was thought to have been normal in the past. If new plant is to be added, the commission observed, it is reasonable to expect that there would be some compensating factors reflected in expenses. Operating expenses were allowed on the basis of actual experience adjusted for known changes.

Federal Surtax Issue

The company computed income taxes on the basis of an income exceeding $25,000, making the company subject to the additional 22 per cent federal surtax. The commission's calculations showed income less than $25,000. The commission recognized that where a utility operates in states besides Oklahoma, as does this company, with income in excess of $25,000, and the utility is an integrated system, or Oklahoma customers might receive benefits from its operations in other states, then each state would be entitled to its proportionate share of the 22 per cent surtax credit.

It was found, however, that this company's operations in other states were "not harmoniously related to its telephone operations in Oklahoma." The stated principle would therefore not apply in this case. "The fact that this company operates all its multiple utility properties in one corporation is not the criterion," the commission stated, "but whether or not the customers of one segment of a multiple utility would otherwise incur such tax expense is an important factor to consider here." *Re Western Light & Teleph. Co., Inc. Cause No. 21180, Order No. 33857, March 26, 1957.*

Transit Rate Increase Denied Where Company Rejects Project That Would Increase Return

THE California commission ruled that Key System Transit Lines, operating in the San Francisco area, unlawfully denied itself a reasonable opportunity to earn a fair return on its property by refusing to undertake a particular plan of operation, Plan III, advocated by the commission, for the substitution of buses for transbay rail service. The commission staff estimated that the plan would pro-

duce a system-wide rate of return of 9.11 per cent.

The company advocated another plan for conversion to buses which would apparently be less remunerative. The company was actually earning a rate of return of only 2.70 per cent and requested rate relief. In these circumstances the commission held that 2.70 per cent was reasonable and denied rate relief.

Investment in Public Property

It was estimated that Plan III would enable the company to save about $750,000 annually in operating expenses. On the other hand, it would entail an investment of some $900,000 in the Bay Bridge *terminal and its approaches, which are* public property. The company refused to expend funds for modification of the terminal, citing several reasons. First, it claimed it would be improper to invest its funds in a state-owned facility; second, it did not have contractual assurance of continued occupancy of the terminal building; third, it had no assurance of its continued existence as a transit utility by reason of possible acquisition of its properties by public transit districts; and, fourth, because it had no assurance of recovery of funds which it might invest in the project.

The company viewed its relationship to the Toll Bridge Authority as only that of a licensee whose possession is subject to termination at the will of the authority. It thought investment of its funds in public property would therefore be neither proper nor justified.

The commission found no merit in the company's position. There is no legal inhibition against the use of corporate funds for this purpose, it was said, if the company's management, in its discretion, elects to make such funds available. Nor would such an expenditure be improper on any of the specific grounds cited by the company. The commission noted that legal safeguards are available for the protection of such an investment.

The commission authorized the conversion to buses under Plan III, granting a certificate for motor operation over specified routes. *Re Key System Transit Lines, Decision No. 54669, Application Nos. 36656, 36980, March 12, 1957.*

Agency Station Discontinuance Justified by Change In Living Pattern

A RAILROAD was authorized by the Missouri commission to discontinue an agency station which had been operating at a loss. In this period of rising costs of operation and higher freight rates, the commission commented, railroads have been forced to economize in every practical way in order to keep freight rates as low as possible. During the time when railroads were being built there were very few passable highways between the various towns where stations were constructed, and the method of transportation and communication between such towns was of a type now considered antiquated.

At that time it was essential to have stations in all towns of any size in order to be of benefit to the public. At the present time, good roads are prevalent and towns 10 and 15 miles apart can be reached by automobile almost in the same number of minutes.

Naturally, said the commission, the amount of business transacted at a station is an important factor to be considered in determining whether or not a station

should be closed. The commission has recognized this fact in other cases and has, in some cases, ordered stations to remain open where the expenses exceeded the revenue. This was especially true where the public would be unduly affected by closing the station.

On the other hand, the commission has permitted a station to be closed where the revenues have been in excess of the expenses. This has been done when the evidence has shown that the public would receive adequate service and would not be adversely affected by closing the station. Each case has had to be decided solely on its own facts. In this case, the commission concluded that while some inconvenience would necessarily result by permitting the discontinuance, the public in general would not be unduly affected. *Re St. Louis-S.F.R. Co. Case No. 13,547, February 20, 1957.*

Balance between Operating Loss and Public Need

PERMISSION to discontinue four passenger trains operating between Richmond and Petersburg, Virginia, was granted by the Virginia commission. The evidence showed that each train averaged annual losses of from $31,000 to $33,000. Passengers numbered between 8.7 and 17.9 per trip for each train. Weighing the public convenience and necessity against the loss to the company, the commission decided that the trains must be taken off.

Two other trains operating between the same centers but also carrying passengers between Norfolk and Washington were required to be continued in service. The loss was somewhat less for these two trains than for the others, and the number of passengers per trip averaged considerably more. In this instance the public need was found to outweigh the loss to the company. On the question of discontinuance of service, an operating deficit is not controlling unless it is so out of proportion to the public convenience and necessity as to make it unreasonable and unjust to compel continuance.

Declaring that the railroads are not to be criticized for trying to make money, the Virginia State Corporation Commission observed:

> When a friend reproached William H. Vanderbilt for taking off a passenger train, saying: "The public has great need for that train," Vanderbilt replied in the classic phrase: "The *public* be damned; I'm running this road for the *stockholders.*" It is up to management to look out for the stockholders and it is up to the public service commissions to look out for the public. Vanderbilt has been criticized for his infelicitous choice of words, but he was only recognizing his fiduciary obligation to those who had trusted him with the management of their savings.

Re Atlantic Coast Line R. Co. Case No. 13101, March 15, 1957.

Holding Company Authorized to Finance Construction by Philippine Electric Subsidiary

THE Securities and Exchange Commission authorized General Public Utilities Corporation, a holding company, to advance on open account amounts not exceeding $3,750,000 to Manila Electric Company, a subsidiary in the Philippine

Islands, to finance an addition to the subsidiary's utility plant. The construction was necessitated by the increased demand for electric service.

Philippine Currency Controls

Currency controls have been in effect in the Philippines since 1949. All dollar remittances for payment of imports of materials, goods, and services, and the remittance from the Philippines of profits, interest, and capital repayments have been subject to licensing. Since the proposed construction and method of financing involved the matter of future dollar remittances by the subsidiary to the holding company, the subsidiary applied to the Central Bank of the Philippines for approval of the proposed program. Approval was granted subject to the provision that the proposed dollar loan be treated as "additional foreign capital and shall be subject to the rules and regulations governing repatriation of capital and remittances of profits existing at the time such repatriation or remittances are made."

Future Availability of Repayment Dollars

The commission observed that the major problem presented by the proposed transaction was the uncertainty surrounding the future availability to Manila of dollars in connection with repayment of the loan in kind. Although the Central Bank had, in effect, approved the issuance of evidences of indebtedness, that approval carried no commitment that license would be forthcoming for the necessary dollar remittances in connection with the payment of the loan.

Section 10(b)(2) of the Holding Company Act requires that the commission shall approve a proposed acquisition of utility securities unless it finds that the consideration "does not bear a fair relation to the sums invested in or the earning capacity of . . . the utility assets underlying the securities to be acquired." There was no question but that, in terms of the local peso currency, the "sums invested in" and the "earning capacity" of Manila's utility assets would be ample to support the proposed advances by the holding company. But the ultimate repayment of the advances would be subject to conditions and circumstances beyond the control of Manila or the holding company.

Despite these factors, however, the holding company's board of directors determined that the course of action proposed was appropriate. In this connection an official of the holding company testified to the consistent efforts being made by the Philippine government to develop the country's economy, both industrial and agricultural. He expressed the opinion that within the next five to ten years the Philippine economy may be developed to the point that will enable the country to go on a free exchange of currency.

Congressional Action

In 1956 Congress enacted a private law which, in effect, exempted the holding company from the necessity of divesting itself of its interest in the Philippine subsidiary. Previously the commission had found that to be necessary under § 11(b)(1) of the act. In its consideration of the bill, Congress had given considerable weight to the financial aid which the holding company could render to Manila.

In its report on the bill, the Committee on Interstate and Foreign Commerce of the House of Representatives stated that under the special circumstances pertaining to this particular situation it could not find

that disposition by the holding company of its investment in Manila "will assure to the degree of satisfaction necessary, the attainment of the objectives of rendering the maximum financial and managerial assistance possible to this highly important utility in the Philippines, with which country we have been and are bound with such ties of friendship and amity. . . ."

Under all these circumstances, and notwithstanding the imponderables concerning the ultimate repatriation of the proposed advances, the commission found no grounds for adverse findings. However, since the companies had not determined whether the evidences of indebtedness to be acquired by the holding company would ultimately consist of first mortgage bonds or serial notes, the commission reserved jurisdiction to pass upon that matter when such determination shall have been made. *Re Manila Electric Co. File No. 70-3544, Release No. 13431, March 25, 1957.*

Other Recent Rulings

Commissioner's Salary. The Washington supreme court held that the fact that the salary of a public utility district commissioner could be increased from $25 a day to $50 a day by appointing him to an operating agency board did not violate constitutional prohibitions against increasing a municipal officer's salary during his term of office, where the commissioner was not elected to perform full-time service, was not prohibited from engaging in other remunerative activities, and was paid only for the days during which services were rendered. *Keeting v. Public Utility Dist. No. 1 of Clallam County, 306 P2d 762.*

Electric Properties Purchased. Georgia Power Company was authorized by the Georgia commission to purchase and operate the properties of Georgia Power & Light Company, upon a showing that adequate generating facilities would be provided to supply power for these properties and eventually eliminate high-cost purchases of energy from Florida, with a resulting decrease in rates. *Re Georgia P. Co. File No. 19314, Docket No. 1089-U, December 3, 1956.*

Separate Operations. The California commission ordered motor carriers handling property for shipper associations to conduct operations separately and without commingling with the associations' operations. *Re Rates, Etc. of Carriers of Property for Nonprofit Shipper Associations, Decision No. 54437, Case No. 5783, January 29, 1957.*

Wharfage Rate Increases Dismissed. The California commission dismissed without prejudice an application for wharfage rate increases where it appeared that the services involved related only to commercial fishing vessels, industrial vessels, and pleasure craft, none of which were operated in the public service, within the meaning of California law, so as to bring such wharfage services under the regulation of the commission. *Re Santa Barbara Wharf Co. Decision No. 54522, Application No. 38168, February 11, 1957.*

Removal of Facilities. In authorizing a railroad to abandon an old and inefficient car repair shop in Wisconsin and construct a modern one in another state, with

resulting hardship to some employees, the Wisconsin commission declared that the decision as to whether such a program was desirable for the successful operation of the utility was peculiarly the function of management and that the public interest would be served in the long run by improvements in economy and efficiency. *Re Chicago, St. P., M. & O. R. Co. 2-R-3162, February 25, 1957.*

Commission Ends Contract Rate. At the instance of a water company, the Illinois commission terminated a contract rate for water supplied by the company to a municipality and authorized a compensatory rate upon a showing that the contract rate, negotiated in 1939, was below the cost of service, it appearing further that such contract rate had been approved by the commission subject to its right of termination in the public interest. *Re Cities Water Co. Nos. 42873, 43001, March 5, 1957.*

Approval of Completed Construction. A municipal power plant's application for permission to operate a railroad spur track with substandard clearances was approved by the Missouri commission, notwithstanding that application had been made after completion of the construction, where the failure to obtain prior approval had been innocent and inadvertent, the evidence failed to disclose any undue safety hazard, and permission would have been granted on timely application. *Re City of Springfield, Case No. 13,500, March 12, 1957.*

Municipal Water Plant Return. A return of 5.5 per cent on a municipal water plant's net book value rate base was considered reasonable by the Wisconsin commission. *Re City of Kaukauna, 2-U-4712, March 12, 1957.*

Rate Discrimination. The Massachusetts commission, in holding a municipal plant's rate schedule reasonable, commented that every rate schedule in modern use has certain elements of discrimination but a regulatory body should not interfere with managerial discretion unless the discrimination is unreasonable under all circumstances. *Town of Lynnfield v. Municipal Light Dept. DPU 11902, March 13, 1957.*

Customer Preference. The New Mexico commission refused to disregard a customer's expressed preference for service by a regulated electric utility in favor of a co-operative which claimed to be servicing the area in question. *Re Public Service Co. of New Mexico, Case No. 480, March 18, 1957.*

Commission Conservation Power. A federal district court stayed actions involving the Kansas commission's power under a conservation statute to interfere with the sale of a part of an interstate pipeline company's pipeline and to compel a crude oil company to continue purchasing oil in certain oil fields, in order to afford an opportunity for the institution of proceedings in the state courts, where the speediest determination of the issues could be had and any federal question involved might be eliminated. *Sinclair Pipe Line Co. v. Snyder et al. 147 F Supp 632.*

Evidence of Contract Carriage. Documentary evidence, including checks cashed by a carrier in amounts corresponding to anonymous invoices which matched certain shipments, along with direct testimony by a federal investigator, was found sufficient by a federal district court to support a verdict that the carrier was guilty of operating as a contract carrier in interstate commerce without a permit.

United States v. Conquest (Connie's Express) et al. 148 F Supp 62.

Full-crew Statute Construed. Construing the Arizona full-crew statute, which exempted from its provisions "helper locomotives going or returning a distance of 25 miles," the Arizona supreme court held that the word "returning" was broad enough to include movements in any direction from the point where the engine ceased to be a helper locomotive. *Arizona v. Atchison, T. & S. F. R. Co. 307 P2d 908.*

Contract Carrier Operation. In dismissing an investigation of a contract carrier's operations, the California commission rejected a contention that the carrier, who transported collect shipments for his contract customers, operated beyond his authority in that the consignees of the collect shipments paid the freight charges and therefore in effect became the shippers, and the carrier, having no contract with the consignees, thus served them beyond his contract authority. *Re Wills (Wills Appliance Delivery Service), Decision No. 54610, Case No. 5849, March 5, 1957.*

Interim Rate Increase Denied. Denying San Francisco city motor carriers an interim rate increase on a mere showing of increased operating costs, the California commission pointed out that the *prima facie* showing for an interim rate increase should be more persuasive than the showing required in an ordinary rate proceeding; there must be a showing of such dire need of immediate relief that the applicant cannot await ordinary procedure. *Re Draymen's Association of San Francisco, Decision No. 54625, Case No. 5441, March 5, 1957.*

Complaint As to Train Crew. Although, upon complaint by a railroad union, the California commission found that a railroad company had moved a train within the yard limits by a crew which was not fully qualified under California law, no corrective action was deemed necessary since, under the circumstances, the offense was only a technical violation at best. *Brotherhood of Railroad Trainmen v. Atchison, T. & S. F. R. Co. Decision No. 54667, Case No. 5772, March 5, 1957.*

Agency Station Continued. The South Dakota commission denied a railroad permission to discontinue agency service at a terminal station, even though the work of the agent would not normally justify the maintenance of the agency service, upon a showing that the station served a large terminal area, with the nearest other agency station 40 miles distant, and that appreciable net earnings were realized from the station. *Re Chicago & N. W. R. Co. Docket F-2458, March 21, 1957.*

Amortization of Losses Denied. The Missouri commission denied a water company permission to amortize, over a period of five years, losses incurred in uncompensated relocations of water mains ordered by state highway authorities, noting that the losses were largely speculative at the time of this proceeding and that the amounts involved were insufficient to warrant a departure from the established accounting procedure. *Re St. Louis County Water Co. Case No. 13,570, March 26, 1957.*

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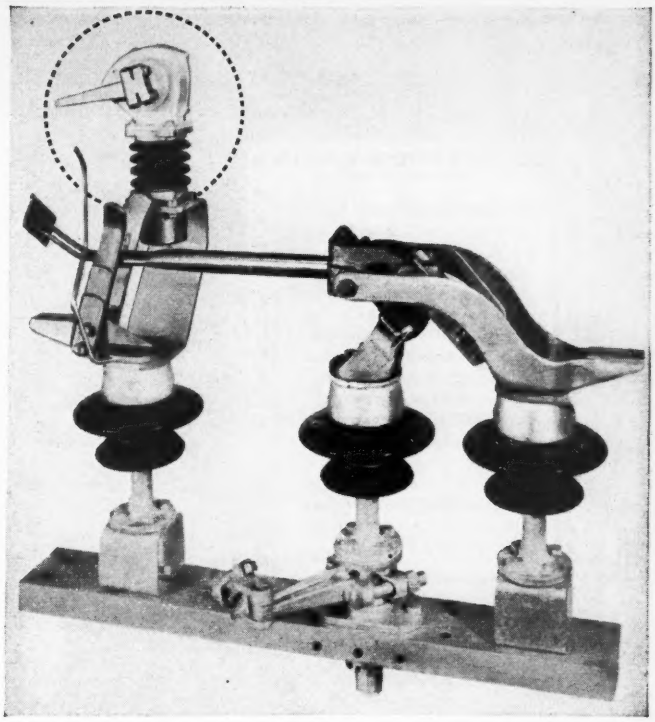

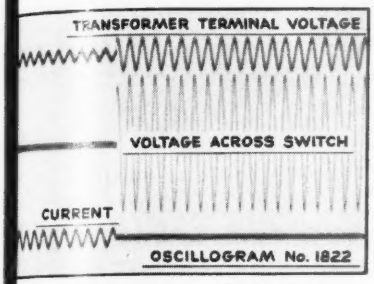

Typical oscillogram made during interrupting test of Delta-Star's Powerupter at 15 kv.

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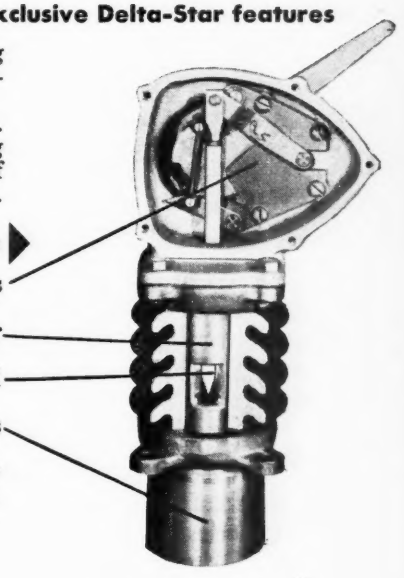

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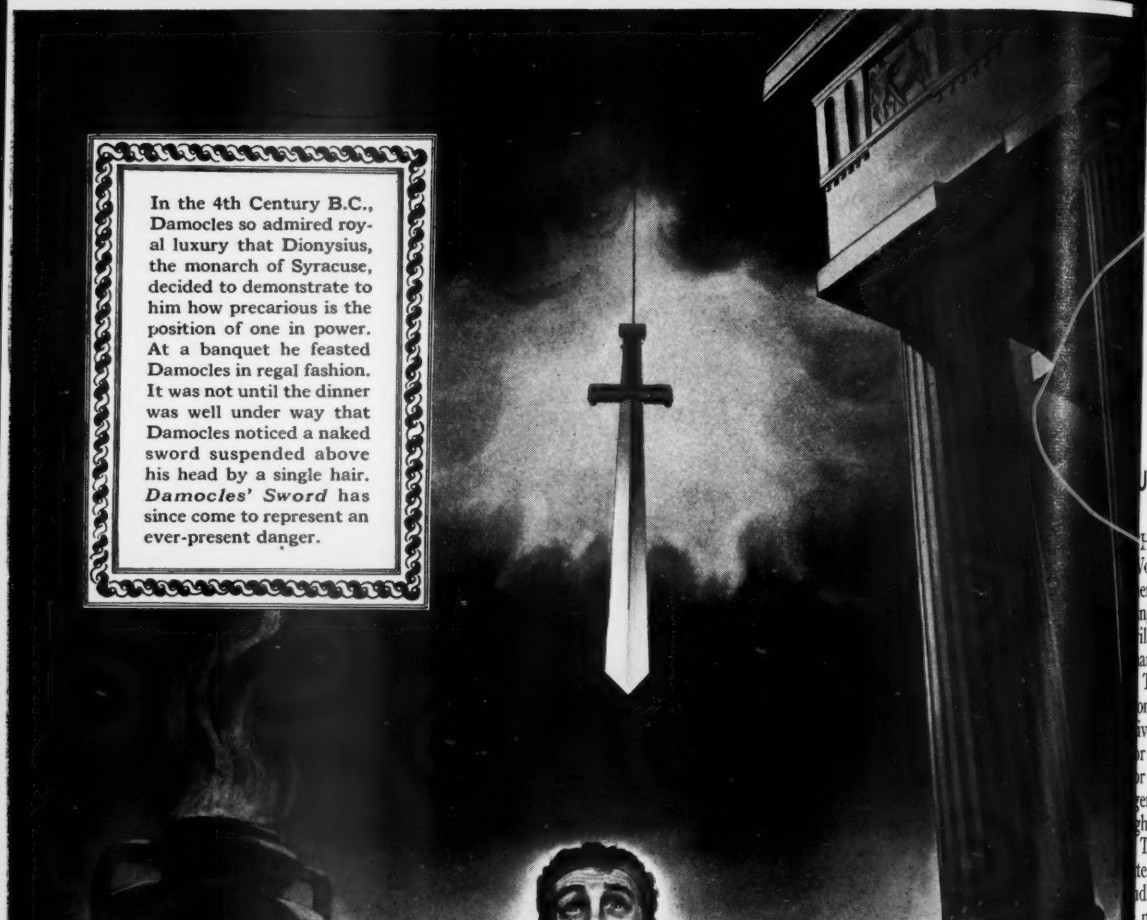
In the 4th Century B.C., Damocles so admired royal luxury that Dionysius, the monarch of Syracuse, decided to demonstrate to him how precarious is the position of one in power. At a banquet he feasted Damocles in regal fashion. It was not until the dinner was well under way that Damocles noticed a naked sword suspended above his head by a single hair. *Damocles' Sword* has since come to represent an ever-present danger.

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Industrial Progress

Utility Management Workshop Scheduled for July-August

THE sixth Utility Management Workshop sponsored by the Department of Industrial and Management Engineering of Columbia University will be held at Arden House, Harriman, N. Y. July 28—August 9, 1957. The Workshop, under the direction of Professor Robert Teviot Livingston, is designed specifically for utility industries to meet the need for developing and extending management methods and concepts in the light of particular problem areas. This year the Workshop directs attention to the job of the manager and the problems of communication in management. A special feature of the Workshop will be a panel on Human Relations in Management composed of social scientists who are experts in this field. The panel will be moderated by Dr. Lyman Bryson, well-kown for his television and radio programs. Intensive small group work and staff presentations and guidance are complemented by speakers who are specialists in the fields of management, decision-making, and communications.

Participation in the Workshop is open to nominees from gas, electric, telephone and pipeline companies, airlines, railroads, and other transportation companies.

Package Power Reactor Operates at Ft. Belvoir

The Army Package Power Reactor, prototype plant developed by the Atomic Energy Commission for the Department of Defense, generated electricity during test operations begun in mid April at the Engineer Center, Fort Belvoir, Virginia. The plant is undergoing tests by the builder, Alco Products, Inc., of Schenectady, New York, preparatory to an extensive performance run to demonstrate reliability.

The reactor sustained a chain nuclear reaction for the first time on April 8, 1957.

The APPR is termed a "package" power plant because it is designed so that its components may be transported by air for installation at remote military installations, such as Arctic bases. The output of the APPR will be 1855 kilowatts of electricity, to be distributed as available on the Fort Belvoir electrical system.

The current series of tests will be followed by a brief shutdown during which a final, complete check of the system will be made before the extensive power run is undertaken.

A dedication ceremony was held on April 29, 1957.

Cost Analysis for the APPR

THE estimate of cost for the Army Package Power Reactor is based on figures available as of January 1, 1957. Final figures cannot be compiled until all phases of the contract have been completed; therefore, this analysis reflects both expenditures through January 1, 1957, and estimates for the final stages of the work.

The APPR project has been funded jointly by the Department of the Army and the Atomic Energy Commission. A fixed-price contract for $2,096,753 to design, construct and test the APPR in a period of 36 months was awarded by the AEC to ALCO Products, Inc. on December 10, 1954. On October 25, 1955 the contract was amended to shorten the 36 months period by five months at a contract cost of $223,500. Other amendments to the contract covering design changes, a plant model, a training film, and a TV circuit for training purposes added another $105,881. The present contract price with ALCO is $2,426,134.

The overall construction cost of the project is estimated at $3,500,000. A breakdown of the $3,500,000 is as follows:

Item	*Estimated Costs*
Architectural Engineering	$ 330,000
Fabrication and Construction..	2,700,000
Fuel Element and Control Rod Fabrication	120,000
Testing, including initial 700-hour test and 6 months operation following initial test...	350,000
Total	$ 3,500,000

Oak Ridge Designed Package Reactor for Remote Sites

THE conceptual design by the Oak Ridge National Laboratory is similar to the ALCO-built reactor plant at Fort Belvoir. There are, however, differences in the original specifications supplied by the Army through the Atomic Energy Commission to ORNL which resulted in radical dissimilarity between the physical layouts of the two plants, but a much less significant difference in details of the basic concepts.

A major factor influencing design of the ORNL package reactor power plant was the plan for its use in the Arctic. Access to Far North installations is often limited to air transportation. Construction periods may be as short as three months out of the year. Weather conditions and terrain have to be taken into account. Because the ORNL design was intended for remote areas, a vapor container was considered unnecessary. An air-cooled condenser was provided to eliminate the need for large quantities of cooling water.

Unlike the Ft. Belvoir APPR, the ORNL design required production of 12 million BTU of steam per hour for heating purposes—steam extracted directly from the high-pressure

(*Continued on page 26*)

secondary line parallel with turbine supply. Consequently, electrical requirements were reduced to 1000 kw.

In the core design, the only significant difference between the APPR and the ONRL concepts is location of the control rod drives. In the ORNL design, the control rod drives were mounted on top the reactor vessel rather than at the bottom, as in the ALCO version.

The reactor building was designed to allow trucks inside for loading and unloading, out of the subzero temperatures, winds, and blizzards. Concrete work had to be held to a minimum. Weight and bulk of concrete make for difficult air transport. For the same reason, the concrete reactor shield was designed for double duty as base for the turbine generator.

The building design for prefabrication permits rapid construction, yet would be rugged enough to meet severest climate conditions. Walls were designed for prefabricated siding with ½ inch Fiberglas insulation, sandwiched between two fluted 18-gage galvanized steel sheets. The prefabricated siding slabs, highly insulated, are easily transported by air. Similarly insulated, the roof is flat-decked and in layers.

Steel-framing of the building would form columns supporting the rails of a 10-ton overhead service-crane. Alongside the top of the reactor shield, at the same level, would be the control and change room.

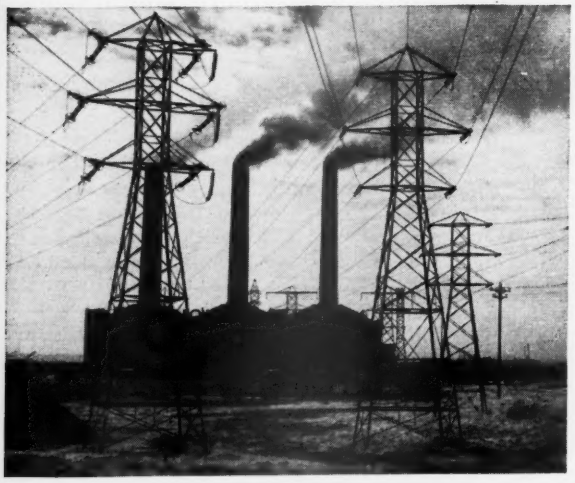
The contract awarded to ALCO Products, Inc. for the design and construction of the APPR stipulated that the AEC, through the Oak Ridge National Laboratory, would perform a series of critical experiments related to the APPR design. The experiments included measurement of critical mass, evaluation of control rod designs and flux and power distributions.

The critical assembly was designed to mock-up as nearly as possible the core as engineered. A rectangular frame supported the core assembly and provided the support structure for the control and safety rod drive mechanism above the core. The entire system was contained in a large water tank. Materials were added to the core in the form of plates. Fuel plates consisted of enriched uranium foils encased in stainless steel sheets. Since the design will contain boron as a burnable poison, boron plates were fabricated by using B_4C in a sintered iron matrix which was clad with stainless steel.

Control rods consisting of an absorber section and a fuel section similar to those proposed in the design were constructed for these experiments. Two cadmium blades were used for operational control and safety. One was located outside of the face of the core and the second cadmium blade was positioned above the core so that it would drop between the fuel positions. Both blades were dropped in the event of a scram. In addition there was a small control rod in one corner of the core.

The cold, clean critical mass is defined as the mass of fissionable material with which the reactor is critical at room temperature with all the rods and poison removed. Several clean critical masses were found as a function of material volume in the core. They ranged from 6.6 to 10.1 kg of U-235 when the metal content of the 138 liter core varied from 9.5% to 19.7%.

(*Continued on page 28*)



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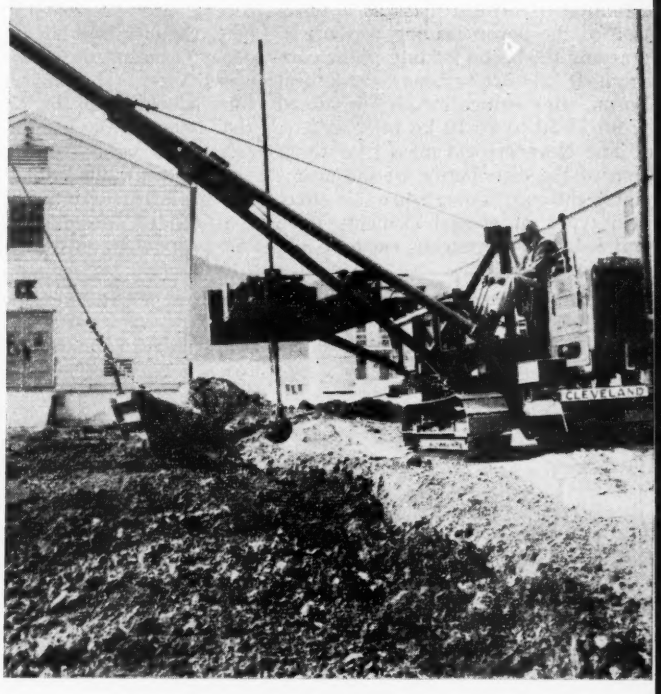

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To obtain long core life the proposed design incorporated boron in the fuel element as a burnable poison. A critical experiment for the determination of critical mass as a function of the boron loading was made. Varying the boron loading in the core from 0 to 225 grams of natural boron, the critical mass increased from 10.50 to 20.10 kg of U-235.

The clean critical mass is a function of the distribution of the uranium in the core. To measure this effect two types of special elements were utilized; a homogeneous element, and a heterogeneous element, similar to those proposed in the reactor design. By placing these elements in various positions of the critical experiment core it was possible to analyze for heterogeneity effects. For the homogeneous clean core the critical mass was 8.8 kg of U-235, whereas for a core loaded with the proposed type fuel assembly the loading would vary from 9.07 kg to 16.47 kg in going from zero grams of natural boron to 170 grams of natural boron.

In order to provide information on the proposed control rods comparisons were made for the control ro in various positions in the core. was estimated that an eccentric co trol rod was worth 3% and a centr rod was worth 6.7% in reactivit A bank of four eccentric rods a one central rod was estimated to worth 24% in excess reactivity.

Suppliers: Army Package Power Reactor

THE timely procurement of mate als and supplies is credited as a maj "behind the scenes" contribution du ing construction of the Army Pac age Power Reactor. Coordination procurement activities was under t direction of ALCO Products, In prime contractor.

The services of over 100 suppli —both large and small—were call on over the 18-month constructi period. First consideration was giv to "long lead" components and m terials—pressure vessels, prima piping, turbine, condenser, and oth major equipment items. All materia in contact with the primary coola were fabricated of stainless steel, material often in short supply duri construction of the plant. Despite u avoidable delays in obtaining certa stainless steel materials, fabricati schedules were speeded up to perm on-schedule installation of the co ponents.

Three major pieces of equipme in the primary system were provid by ALCO: the reactor vessel a control rod assembly; the pressuri er; and the steam generator.

The two "canned rotor" ty pumps used in the primary circuit a of special design, and provided Westinghouse Corporation. The pumps, which carry the prima water from the steam generator a back to the reactor, are 100 per c leak-proof. They have a rated c pacity of 4,000 gpm, and are d signed to meet the requirements i posed by the 1200 psi operating pre sure.

A two-way swinging-gate ty valve of special design also was fa ricated by ALCO. Piping extendi from this "Y" shaped unit connec the two pumps, one of which ser as a stand-by unit ready for use event of failure of the second u Primary piping is of solid stainle steel, of $\frac{3}{4}$-inch wall thickne $12\frac{3}{4}$-inch outside diameter, provid by the Tube-Turn Co.

The secondary system at APP

(*Continued on page* 30)

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NEW ISSUE

April 24, 1957

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carrying steam to the turbine-generator set, is of carbon steel. The conventional design 2,000-kw steam turbine and electrical generator was supplied by the General Electric Company, as was the switch gear for electrical power distribution. The condenser was fabricated by Lummus Company.

The elaborate water treatment system, reducing impurities to less than 1 ppm, includes two demineralizers provided by General Ionics Corp. A 5,000-gallon distilled water tank supplies make-up to the secondary system, and to the 5,000-gallon primary make-up tank through the demineralizers. A procurement lead time of several months was required on all these items to insure that completion would coincide with the construction schedule.

Instruments and panels for the control circuits at APPR were supplied by Minneapolis-Honeywell. Circuitry design was developed by ALCO engineers and includes an extensive network of safeguards to protect operating personnel and the public.

The vapor container, a major safety consideration, was fabricated and erected of ⅞-inch steel by Bethlehem Steel Corporation. Since the construction schedule called for the completion of this unit before installation of primary equipment and piping, first priority was given to its procurement. The 10-gage steel shell lining for the vapor container was fabricated by the Posey Iron Works, Inc.

Despite the special materials and equipment requirements of an atomic power plant, experience with the APPR demonstrates that closely coordinated procurement efforts make possible a construction schedule not unlike that for a more conventional project.

Conventional Generating Equipment in Army Package Power Reactor

IN stages of the Army Package Power Reactor beyond the steam generator, power equipment closely approximates—on a smaller scale—that of a conventional electric-power generating station.

The conventional generating, transmission and control equipment for the APPR was designed as a unit for ALCO Products, Inc. by the General Electric Company. Seven General Electric plants had a hand in manufacturing that equipment—Fitchburg, Lynn and Pittsfield, Mass.; Philadelphia, Pa.; Bridgeport and Plainville, Conn., and Fort Wayne, Ind.

Once the steam leaves the steam generator in the primary circuit, the equipment is of conventional type used in producing and controlling electric power.

The heart of the conventional end of the APPR is the turbine.

APPR's turbine-generator set receives steam from the steam generator. Steam enters at 190 psia and 404° Fahrenheit. The steam strikes the "buckets" or vanes on eight successive wheels of the turbine before it is exhausted to a condenser and recirculated.

The turbine shaft is connected to a 2500-kilovolt-ampere generator through reduction gears. Spinning at a constant speed of 1200 RPM, the generator produces three-phase, 60-cycle electricity at 4160 volts.

Heavy cables carry the power through circuit breakers—elaborate power-operated switches designed to open the circuit under the worst foreseeable fault conditions—to an outdoor transformer which "steps down" the voltage to 2400 volts to tie into the regular utility lines supplying Fort Belvoir.

All the outdoor equipment and transmission lines are protected by G-E lightning arresters.

The control center allows the operator to see at a glance precisely what is happening in all parts of the electrical system.

A small portion of the power produced is tapped off through a 300-KVA, three-phase, dry-type transformer for station service such as lighting, heating and operating pumps and auxiliary equipment. A spare service transformer and a 125-volt battery system is provided to operate minimum essential instruments and provide lighting in the event of shut-down.

Memphis Power Coal System To Be Installed by Link-Belt

LINK-BELT COMPANY has been awarded a contract for what it claimed to be "one of the largest coal handling systems ever to be installed as initial equipment."

The installation, at the new Thomas H. Allen Electric generating station of the Memphis Light, Gas & Water division, city of Memphis, Tenn., initially will have capacity to handle 2,200 tons of coal per hour, Link-Belt said.

It will consist of a dual-belt co
veyor system from the coal barge
ceiving bin to coal bunkers, with ea
conveyor handling 1,100 tons p
hour; a single belt system to stora
handling 2,200 tons per hour, a
two single belt systems, each ha
dling 1,100 tons per hour.

The station, which will have
initial nominal rating of 750,0
kilowatts with an expected gro
capability of 862,500 kw., is expect
to be doubled in size in the next
years.

Con. Ed Sets New Gas Revenue Goals for 1957

CONSOLIDATED Edison has
its sights on increasing its gas re
nue by $4,755,000 annually from ne
gas heating equipment installatio
this year in its 439 square mile N
York City and Westchester gas ser
ice area.

Con Edison's new gas revenue go
for 1957 exceeds last year's gai
which, in turn, surpassed what t
company had hoped to achieve, J.
Murtha, Con Edison Sales Prom
tion manager, told more than 200 re
resentatives of firms which sell,
stall and service gas space heati
equipment in the city at a meeting r
cently.

New gas heating installations
1956 represented additional annu
revenue of $4,635,000 to the co
pany, Mr. Murtha said. Included
this total was $2,660,000 in spa
heating revenue representing 9.8
space heating jobs worth $5,600,0
in new business to the local plumbi
industry, he reported.

Since Con. Edison reduced g
rates for apartment house heating
year ago, 446 apartment houses ha
been signed up for gas space heati
he said, and gas space heating equi
ment was included in more than
per cent of new homes built last ye
in the Company's gas service area.

Yarway Bulletin on New High Capacity Impulse Steam Trap

Yarnall-Waring Company, Phil
delphia 18, Pa., announces their B
letin T-1746 which describes the ne
Yarway series 40 impulse stea
trap, designed especially to hand
heavy condensate loads.

The 4-page bulletin describes t
operation of the series 40 Trap, giv
sizes and capacities, lists typical a
plications, and shows dimensio
weights and prices.

Copies are available on request.

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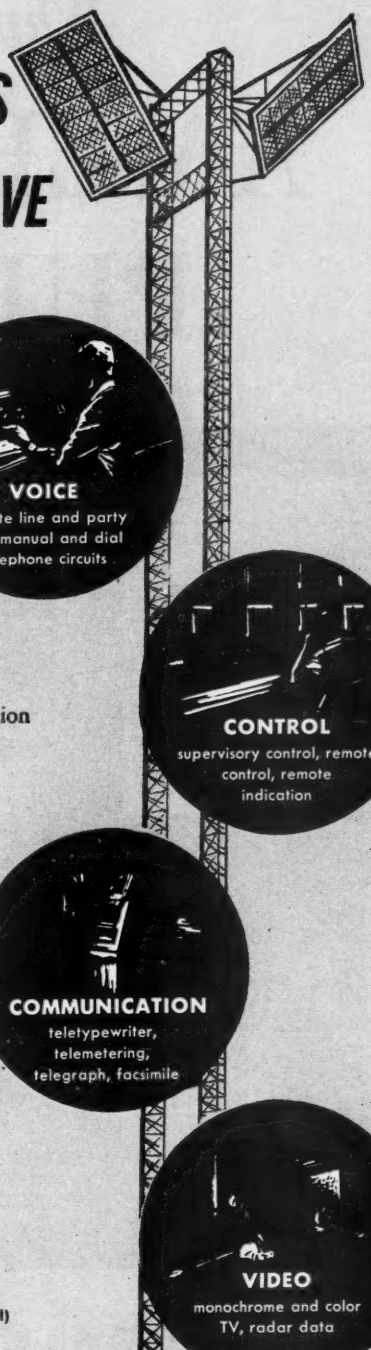

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Working dependably over the years, Motorola microwave systems ranging from 7 to over 1000 miles in length are operating in all types of applications and in all kinds of weather. This greater acceptance and experience means engineering and production "know how"—equipment which performs better, lasts longer, and costs less to maintain. These extra dividends repeatedly appear in operational records of Motorola users.

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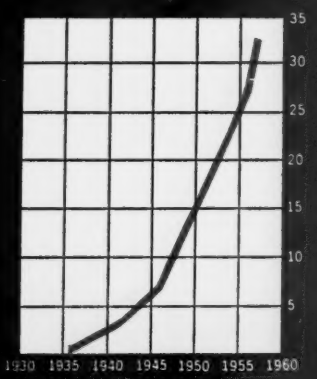
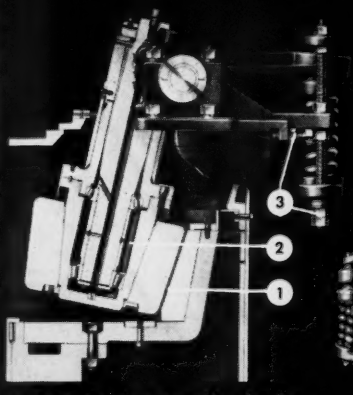
Why the Bowl Mill is

AMERICA'S No. 1 PULVERIZER

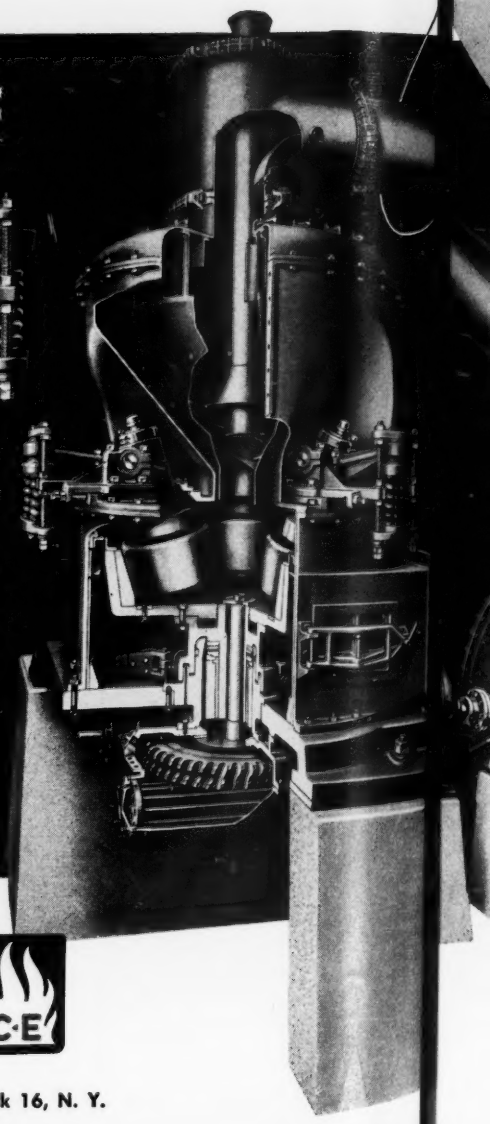


This chart presents a quick picture of the tremendous acceptance of the Bowl Mill since its introduction in 1935.



Cutaway view showing assembly of roller journal in bowl. Note: 1 — no metal-to-metal contact; 2 — self contained lubrication system (no grease cups); 3 — convenient method of adjustment without dismantling.

Looking down on top of mill. See handy arrangement of levers which adjust vanes — while in operation — to control fineness of coal leaving mill.



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B-587

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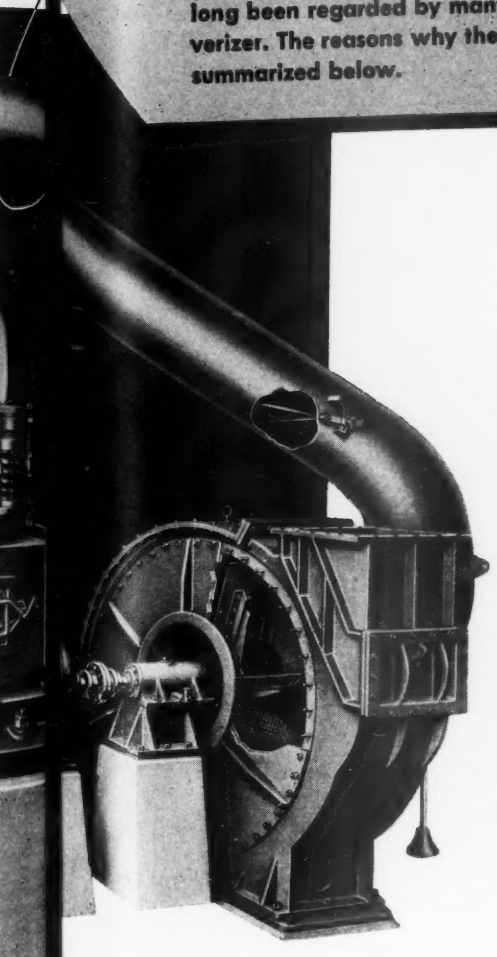
A first-class pulverizer should possess certain basic capabilities of which the following — most operators will agree — are the most important. They are the ability to . . .

- *handle high moisture fuels without difficulty*
- *operate with low power requirement*
- *stay in continuous service for long periods*
- *operate with low maintenance costs*
- *permit convenient control of fineness while running*
- *adjust grinding pressure automatically*
- *lubricate, when required, while in operation*
- *operate quietly and without vibration*

It is because the C-E Raymond Bowl Mill measures up on *all* these points that it has long been regarded by many leading power engineers as the country's No. 1 pulverizer. The reasons why the Bowl Mill is an outstanding all-around performer are summarized below.



HIGH MOISTURE — The most effective means of achieving good pulverizing results with high moisture fuels (16 — 18% — Eastern coal, 24% Midwestern, 45 — 50% lignites) are (1) by the admixture of fuel already dried in the mill with the raw feed and (2) by the use of high temperature air. The C-E Raymond Bowl Mill was designed to do both of those things, and does them well. Air temperatures of 700° F. and above can be utilized.

LOW POWER CONSUMPTION — Basic design characteristics of the Bowl Mill permit pulverizing at less power per ton of material than any mill now available. The rapid flow of material through the mill and the prompt removal of fine coal as it is produced prevents over-grinding. This, in conjunction with the relatively low mass of grinding elements and rapid drying action in the mill, assures minimum power consumption.

RELIABILITY — Design and materials are responsible . . . but results prove the point — such results for example as operating records of 8500, 10,000, 15,000, 20,000 continuous service hours without repair or replacement of parts.

MAINTENANCE — Bowl Mill maintenance cost has always been the lowest in the field. Continuing improvements in designs, materials and construction keep it that way. A minimum of outage time is required for dismantling and assembly. It's a matter of record in many plants that higher costs of material and labor over the past 15 years have not been reflected in increased maintenance cost per ton of coal pulverized.

FINENESS CONTROL — All necessary adjustments to control fineness of finished product can be made conveniently from the outside of the pulverizer *while it is in operation.*

AUTOMATIC GRINDING PRESSURE — The arrangement of spring-loaded roller journals on the Bowl Mill provides automatic compensation for the variation in pressure between grinding surfaces required by variation in grindability of coals.

LUBRICATION — Is no problem with the Bowl Mill. When required — at infrequent intervals — all lubrication is handled from outside the mill while it is in service.

VIBRATIONLESS — QUIET — The Bowl Mill's grinding rollers make no metal-to-metal contact with the grinding ring, assuring quiet, vibrationless operation.

• • •

Whether you are evaluating pulverizers for your present plant expansion program or for future requirements, we suggest you use the above check list to get the facts. Send for Catalog PC-8 for further details.

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